FILE COPY - TDA

REPORT ON AN AMBIENT AIR SURVEY IN MARATHON, ONTARIO

(American Can of Canada, Limited)

September and October, 1977

ARB-TDA Report NO. 52-78

April, 1979

MOE
MAR
REP
ANNW

c.1
a aa

Ministry of the Environment

The Honourable
Harry C. Parrott, D.D.S.,
Minister

Graham W. S. Scott,
Deputy Minister

Copyright Provisions and Restrictions on Copying:

This Ontario Ministry of the Environment work is protected by Crown copyright (unless otherwise indicated), which is held by the Queen's Printer for Ontario. It may be reproduced for non-commercial purposes if credit is given and Crown copyright is acknowledged.

It may not be reproduced, in all or in part, for any commercial purpose except under a licence from the Queen's Printer for Ontario.

For information on reproducing Government of Ontario works, please contact ServiceOntario Publications at copyright@ontario.ca

AIR RESOURCES BRANCH

Technology Development and Appraisal Section
Monitoring and Instrumentation Development Unit

ARB-TDA Report No. 52-78

REPORT ON AN AMBIENT AIR SURVEY

IN

MARATHON, ONTARIO.

(American Can of Canada, Limited)

September and October, 1977

April, 1979

ANNW

TABLE OF CONTENTS

		Page
01.	SUMMARY	3
02.	INTRODUCTION	6
03.	SOURCE DESCRIPTION	7
04.	SURVEY TECHNIQUE	9
05.	MONITORING TECHNIQUE	12
06.	MONITORING SITE LOCATIONS	13
07.	RESULTS	16
08.	DISCUSSION	22
09.	APPENDIX	28

01. SUMMARY

An ambient air monitoring survey was undertaken by the Monitoring and Instrumentation Development Unit of the Air Resources Branch in the town of Marathon during the last week of September and the first two weeks of October in 1977. The main purpose of this survey was to monitor selected gaseous pollutants in the vicinity of the American Can of Canada Limited kraft pulp mill located approximately 1 km west of this community.

Although several frontal systems moved through this locale during the 11 monitoring days of this survey, ambient air monitoring was carried out under clear weather conditions and predominantly light westerly winds (less than 15 km/hr). Peninsula Hill imposed severe channelling of these westerlies along the NW/SE and SW/NE directions and because of this feature, mill emissions were rarely carried into the urban, populated area of Marathon.

From the 120 hours of total reduced sulphur (TRS)* data acquired during this survey, the overall average ground level concentration (glc) was 0.036 ppm with an associated standard deviation 0.032 ppm. Approximately one-half of the TRS glc data depicted 30-minute average concentrations at the points of impingement in excess of the Ontario Guideline (0.027 ppm).

The highest 30-minute average glc of TRS was detected near the kraft pulp mill on October 6th and this value was 0.220 ppm. A Ford mobile air monitoring (MAM) unit monitored TRS for approximately 1 hour at this site and all of the TRS 30-minute average glc's exceeded the Guideline.

Since southwest winds were prevalent during this survey, approximately one-quarter of the TRS glc data were acquired

* Because the analyzer was sensitive to H_2S, mercaptans and other malodorous sulphide compounds, the results were reported as total reduced sulphur (TRS) and expressed as concentrations of hydrogen sulphide.

along Highway #17, 6 km northeast of the kraft pulp mill. Significant TRS glc's were detected in this area; the highest 30-minute average being 0.100 ppm (about four times the Guideline) recorded on October 4th.

Because of the severe wind channelling imposed by Peninsula Hill, only 1 of the 18 monitoring periods (M.P.) comprising this survey gave results with plume impingement conditions in downtown Marathon. During the night of October 4th, the MAM unit was located near the Water Tower and the maximum 30-minute average TRS glc detected was 0.40 ppm. The TRS Guideline was exceeded throughout the 13 hours comprising this monitoring period.

An attempt was made to monitor TRS glc's at the Heron Bay Indian Reserve located on the Pic River, 14 km south of the kraft pulp mill. However, since the winds were unfavourable during this survey, only background TRS glc's could be measured. On October 12th, 3 hours of TRS data yielded an average glc of 0.006 ppm.

An analysis of the pertinent meteorological and air quality data clearly showed the kraft pulp mill owned by American Can of Canada Limited as being the only possible source of TRS in this survey area.

Relatively low concentrations of sulphur dioxide (SO_2) were detected during this survey. From the 120 hours of monitored data, the overall average glc of SO_2 was 0.016 ppm with an associated standard deviation 0.030 ppm. At all monitoring sites, the 30-minute average glc of SO_2 at the points of impingement were found to be less than the Ontario Standard (0.300 ppm).

The maximum SO_2 glc detected during this survey was acquired at a site close to the kraft pulp mill. The highest 30-minute average glc was 0.26 ppm; 85% of the Standard.

Again, wind-rose analyses conclusively showed that the kraft pulp mill was the only possible SO_2 source in this survey area.

Ozone (O_3) was detected in low concentrations during this survey. The overall average O_3 glc for the entire survey was 0.020 ppm with an associated standard deviation 0.007 ppm. The highest 30-minute average glc was 0.049 ppm.

For the 120 hours of oxides of nitrogen (NO_x) data acquired during this survey, the overall average glc was 0.055 ppm with associated standard deviation 0.056 ppm. Approximately 2% of the NO_x data yielded 30-minute average glc values in excess of the Ontario Standard (0.27 ppm). The highest 30-minute average was 0.48 ppm. Vehicular traffic was deemed the most probable source of this gaseous pollutant.

02. INTRODUCTION

As requested by the Northwest Region, the Monitoring and Instrumentation Development Unit of the Air Resources Branch conducted an ambient air survey in the town of Marathon during September and October, 1977.

The main aim of this survey was to measure ground level concentrations of selected gaseous pollutants suspected to have originated from the kraft pulp mill, owned by American Can of Canada Limited, located immediately to the west of Marathon.

03. SOURCE DESCRIPTION

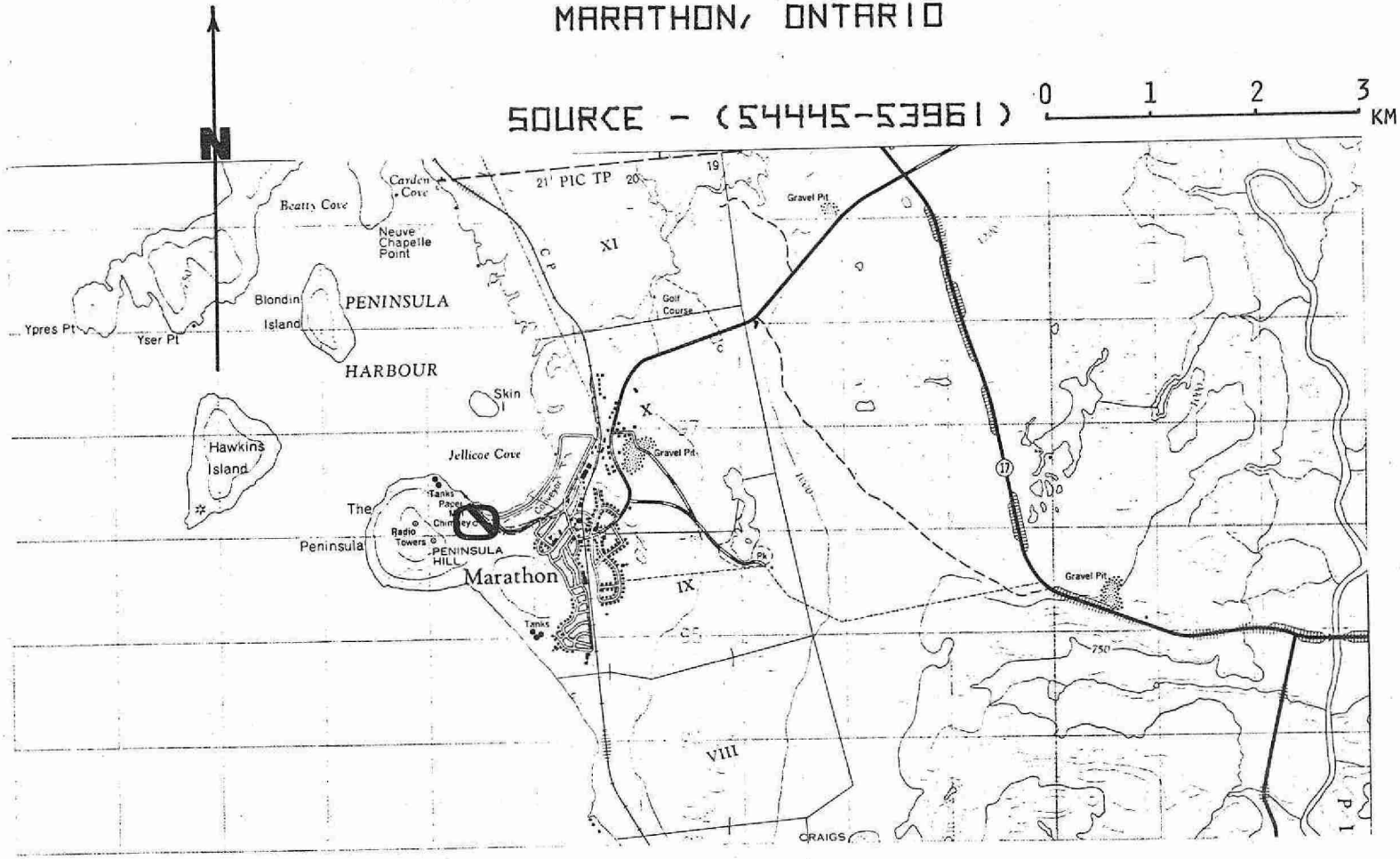
Marathon is located on the north shore of Lake Superior, approximately 200 km east of Thunder Bay. Immediately to the west of Marathon, the American Can of Canada Limited owns and operates a kraft pulp mill. This kraft pulp mill lies in a sheltered cove (Jellicoe) and is situated on the northeast side of a large promontory called Peninsula Hill.

This kraft pulp mill and surrounding area are shown in Map #1, page 8.

AMERICAN CAN OF CANADA LIMITED
MARATHON, ONTARIO

SOURCE - (54445-53961)

0 1 2 3 KM



MAP #1

04. SURVEY TECHNIQUE

Two mobile air monitoring units, a 1971 Ford Econoline SP-200 van and a 1975 General Motors Corporation Transmode, were utilized to monitor the emissions from the American Can of Canada Limited kraft pulp mill. Both units were equipped with automated data acquisition systems (Ford - Hewlett & Packard 3480 system and the GMC - Hewlett & Packard 9830A mini-computer system) and on-board electric generators (Ford - 3.5 kW and GMC - twin 6 kW). Automated, independent and continuous monitoring capabilities were major features of these units. The HP 9830A mini-computer system performed initial data analyses in the field (re: accuracy and validity) but the final data reduction and analyses were carried out by a larger system located within the Air Resources Branch at 880 Bay Street, Toronto.

Each unit had permanently installed analyzers for monitoring sulphur dioxide (SO_2), ozone (O_3), carbon monoxide (CO), hydrogen sulphide (H_2S), total hydrocarbons (THC), methane (CH_4) and oxides of nitrogen (NO_x).

Although CO, THC and CH_4 were monitored during this survey, the discussion pertaining to these pollutants is not included in this report since it was felt that the reported values were only indicative of background concentrations.

Following an assessment of wind direction and wind speed, the approximate location of maximum ground level concentration impingement zones was found and ambient air monitoring was initiated within these areas. Air quality was continuously monitored for at least one hour at each location, and whenever possible, farther downwind.

TABLE 1: INSTRUMENTATION - FORD

Instrument	Manufacturer	Analytical Technique	Maximum Sensitivity (full scale)
H_2S Source	Hartmann & Braun (H&B Prüfgasgenerator)	N/A	N/A
*H_2S Analyzer	H&B Picos	electrochemical	0.05 ppm
SO_2 Source	H&B Prüfgasgenerator	N/A	N/A
SO_2 Analyzer	Wösthoff oHG Ultragas - 3	conductivity	1 ppm
O_3 Analyzer and Source	Dasibi 1003 - PC	Ultra-violet absorption	1 ppm
NO_2 Source NO_x, NO_2, NO analyzer	Bendix 8101-B	chemiluminescent	0.5 ppm
CO Analyzer	H&B Uras 2T	Infrared absorption (NDIR)	50 ppm
THC, CH_4, THC-CH_4 Analyzer	Ingenieur - Produktions-Gruppe-München (IPM) RS-5	Dual Flame - ionization detector	50 ppm THC (as CH_4)
CO/THC, THC-CH_4, CH_4 Source	Matheson	Compressed gas	N/A

*See Table 2.

TABLE 2: INSTRUMENTATION - GMC

Instrument	Manufacturer	Analytical Technique	Maximum Sensitivity (Full Scale)
H_2S Source	Hartmann & Braun (H&B Prüfgasgenerator)	N/A	N/A
H_2S Analyzer*	H&B Picos	electrochemical	0.05 ppm
SO_2 Source	H&B Prüfgasgenerator	N/A	N/A
SO_2 Analyzer	H&B Picoflux 2	conductometric	0.3 ppm
O_3 Analyzer/Source	Bendix 8002	chemiluminescent	0.05 ppm
NO_x, NO_2, NO Analyzer	Bendix 8101-B	chemiluminescent	0.5 ppm
CO Analyzer	H&B Uras 2T	Infrared Absorption	50 ppm
THC, CH_4, THC-CH_4 Analyzer	Ingenieur - Produktions-Gruppe München (IPM) RS-5	Dual flame ionization detector	50 ppm THC (as CH_4)
Hg Analyzer	Scintrex HGP-2	Ultra-violet Absorption	200 ng/m^3
CO, THC, THC-CH_4, CH_4 source	Matheson	compressed gas	N/A
Hydrocarbons chlorinated hydrocarbons, PAN, etc. Analyzer	Hewlett & Packard Gas Chromatograph 5830A System	Retention time as measured by electron capture, thermal conductivity, or flame ionization detectors	As set by calibration procedure.

Instrument	Manufacturer	Scale
**Wind speed	Lambrecht gmBH	km/hr
**Wind direction	Lambrecht gmBH	degrees
Temperature	Weather Measure (WM) T621	^oC
Relative humidity	WM-HM-111P	percent
Barometric pressure	WM-BM70-B242	millibars
Solar radiation	WM Star Pyranometer	watts/cm^2

* Because the analyzer was sensitive to H_2S, mercaptans and other malodorous sulphide compounds, the results were reported as total reduced sulphur (TRS) and expressed as concentrations of hydrogen sulphide.

** These wind indicators are located on top of a 10-metre retractable mast.

05. MONITORING TECHNIQUE

Sample Collection -

Ambient air samples were taken at a constant flow rate (approximately 0.2 cubic metres/min) by probes located on top of the MAM units and whose orifices were approximately 5 metres above ground level. The air samples then entered a manifold from which a short teflon sampling line was connected to each analytical instrument. This arrangement ensured little or no sample degradation, minimal delay time, minimal wall/memory effects and minimal sample contamination due to ground level sources (such as entrained soil or vehicular traffic).

Meteorological Analyses -

Ground-based meteorological conditions were monitored continuously by the instrumentation associated with the Transmode MAM unit (Table #2, page 11). No meteorological data were collected by the Ford MAM unit. Since both MAM units operated close together, the Transmode MAM data were considered applicable to the data from both units.

The large scale meteorological data pertaining to air mass movements, frontal systems and prognostics were obtained from Environment Canada, Thunder Bay Airport.

Calibration -

Analyzers and internal calibration sources were calibrated before the survey. During the survey, the calibrations were checked daily using the calibrated gas sources and built-in electronic circuitry. All monitors were found to be extremely stable and the calibration remained within the prescribed limits throughout the duration of the survey. Immediately following completion of this survey, all instruments were rechecked in the laboratory and all calibration statistics were found to be satisfactory.

06. MONITORING SITE LOCATIONS

The ambient air monitoring sites are shown on Map #2 (page 14) and described in Table #3 (page 15). Over 133 hours of data were accumulated at these 18 monitoring sites. Both MAM units were involved in the data acquisition and the sites are presented in chronological order.

All monitoring sites were referenced to the recovery and power boiler stacks (UTM co-ordinates 54445-53961 , reference to Map #1, page 8) located at the southwest side of the kraft pulp mill.

MAP #2

AMERICAN CAN OF CANADA LIMITED
MARATHON, ONTARIO

MONITORING SITES

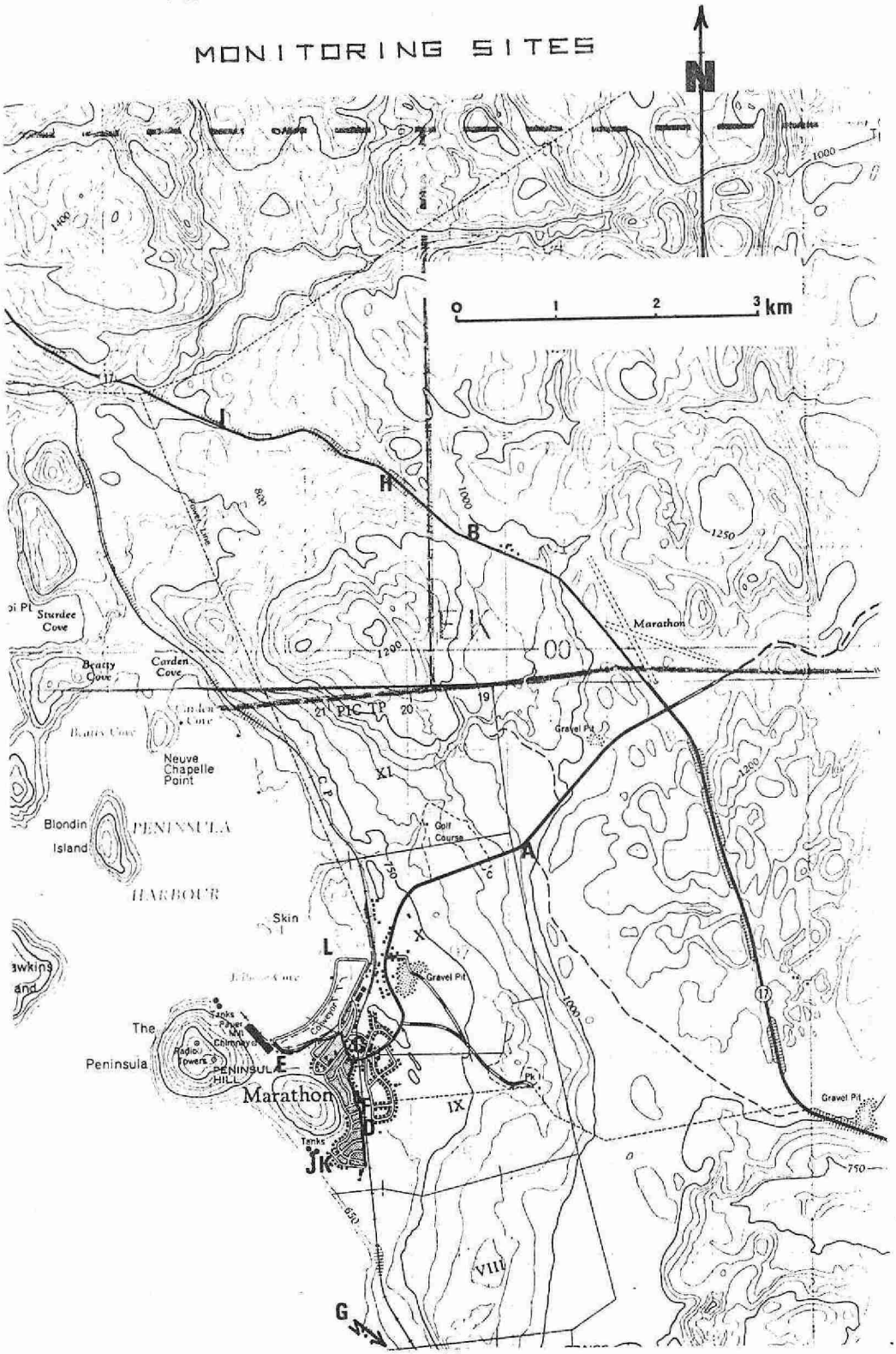


TABLE #3

MOBILE AIR MONITORING SITES

All monitoring sites were logged as

Marathon II #X

Site (#x)	Map Identification	Location and UTM Co-ordinates	Distance & Bearing from Source (km)	(degrees)	Date
1	A	Pic Motel 54720-53980	3.3	060	Sept.27
2	A	Pic Motel 54720-53980	3.3	060	Sept.28
3	B	Hwy.#17 & Gulf Station 54700-54010	5.5	035	Oct.4
4	C	Water Tower 54550-53962	0.9	090	Oct.4
5	D	Main Street S. 54560-53953	1.5	135	Oct.5
6	E	Mill Construction Site 54475-53959	0.3	120	Oct.6
7	F	#21 Yawkey Ave. 54555-43953	1.5	130	Oct.6
8	F	#21 Yawkey Ave. 54555-43953	1.5	130	Oct.6
9	G	Mouth of Pic River 55150-53833	14.5	150	Oct.12
10	H	Hwy.#17, 1.5 km W. of OPP stn. 54585-54017	5.5	015	Oct.13
11	I	Hwy.#17, 3 km W. of OPP stn. 54445-54025	6.0	000	Oct.13
12	I	Hwy.#17, 3 km W. of OPP stn. 54445-54025	6.0	000	Oct.13
13	J	Shell Depot 54510-53949	1.4	160	Oct.14
14	J	Shell Depot 54500-53949	1.3	155	Oct.15
15	K	Howe St. (end) 54510-53949	1.4	160	Oct.18
16	K	Howe St. (end) 54510-53949	1.4	160	Oct.18
17	K	Howe St. (end) 54510-53949	1.4	160	Oct.19
18	L	Shore Road 54510-53972	1.3	030	Oct.19

07. RESULTS

Definition of Terms -

Scan Time: Frequency of interrogation of the monitoring instrumentation by the data acquisition system.

Time: Time of first and final scans used to determine running averages.

Number of Readings: Number of scans.

All statistical values are based on instantaneous recorded values and all results are expressed in parts per million (ppm). An example of the processed data format incorporated in this survey report is presented in Table #4 , page 17.

The statistical summaries of the collected data are presented in Tables #5 and #6 , pages 18 through 21. Supplementing these tables, graphs of concentrations versus time for TRS, SO_2, NO_x and O_3 are presented in Figures #1 to #10, pages 29 to 38.

In order to identify source locations, wind-rose/concentration analyses were also performed (reference to Maps #3 to #8 , pages 39 through 44).

Omissions, signifying invalid data, will be noted in the statistical summary tables. Instrument failure and residual calibration effects were the main causes for these erroneous readings.

TABLE #4

Processed Data Format

Marathon II #17

(Further Analyses are Presented in the Appendix)

MARATHON II #17

DATE: OCT 19 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: HOWE ST. (END) (54510-53949); 1.4KM & 160DGS/SOURCE

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
10:17----10:47	1.2E+01 5.6E-01 8.2E-02 61	2.0E-02 1.3E+00 1.8E-02 992	1.7E+00 9.4E-02 3.5E-02 1	2.8E-03 3.2E-02 10 339
10:22----10:52	1.2E+01 5.6E-01 8.2E-02 61	2.1E-02 1.3E+00 1.8E-02 992	1.7E+00 9.5E-02 3.6E-02 2	3.2E-03 3.3E-02 10 311
10:27----10:57	1.1E+01 5.6E-01 7.7E-02 61	1.9E-02 1.3E+00 1.7E-02 992	1.7E+00 9.1E-02 3.4E-02 2	3.9E-03 3.3E-02 10 303
10:32----11:02	6.7E-01 4.5E-01 4.0E-02 62	1.9E-02 1.2E+00 1.8E-02 992	1.5E+00 5.4E-02 3.2E-02 2	5.0E-03 1.6E-02 10 300
10:37----11:07	2.6E-02 4.3E-01 2.4E-02 63	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.0E-02 2.9E-02 2	6.7E-03 1.6E-02 10 297
10:42----11:12	2.6E-02 4.3E-01 2.3E-02 65	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.1E-02 2.5E-02 2	9.4E-03 1.7E-02 10 288
10:47----11:17	2.6E-02 4.3E-01 2.6E-02 66	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.4E-02 2.4E-02 2	1.2E-02 1.8E-02 9 281

NUMBER OF READINGS 60

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	2.09E+02	5.81E+00	2.82E+01	3.44E-05	6.94E+02
H2S	8.73E-03	2.49E-02	1.86E-02	3.87E-03	1.81E-02	1.27E+00
THC	1.47E+00	9.98E+00	1.61E+00	4.41E-01	1.58E+00	1.20E+00
SO2	1.80E-03	2.30E-02	7.40E-03	6.23E-03	5.18E-03	2.35E+00
THC-CH4	4.14E-01	2.09E+00	4.94E-01	2.72E-01	4.65E-01	1.32E+00
CH4	1.24E+00	1.51E+00	1.25E+00	3.49E-02	1.25E+00	1.03E+00
NOX	1.86E-02	7.14E-01	6.93E-02	9.94E-02	4.95E-02	1.98E+00
NO2	1.00E-06	5.86E-01	2.48E-02	7.44E-02	7.18E-03	1.60E+01
NO	6.88E-03	5.35E-01	5.40E-02	8.73E-02	3.17E-02	2.45E+00
OZONE	7.82E-03	2.00E-02	1.79E-02	1.98E-03	1.78E-02	1.15E+00
SOLAR RAD	9.03E-03	4.61E-02	2.94E-02	1.18E-02	2.66E-02	1.62E+00
TEMP	9	10	10	1		
HUMIDITY	57	68	63	3	63	1
BAROMETER	991	992	992	0	992	1
WIND SPEED	0	7	2	2	0	82

TABLE 5A CONTAMINANT LEVELS IN MARATHON UNITS PPM

SITE LOCATION	Date 1977	Monitored Period	Instantaneous Concentration				30-Minute Maximum Average Concentration		Sample Period Average Concentration		Scan Time
			SO_2		TRS						
			Min.	Max.	Min.	Max.	SO_2	TRS	SO_2	TRS	(min.)
Marathon II #1	Sept. 27th	17:30-04:10	0.004	0.004	0.001	0.012	0.004	0.010	0.004	0.002	10
" #2	28th	17:30-07:20	-	-	-	-	-	-	-	-	10
" #3	Oct. 4th	12:17-21:02	0.001	0.113	0.001	0.126	0.081	0.100	0.022	0.049	1.0
" #4	4th	21:38-10:23	0.001	0.027	0.019	0.058	0.008	0.040	0.001	0.035	1.0
" #5	5th	11:13-13:43	0.002	0.127	0.001	0.165	0.042	0.070	0.014	0.034	1.0
" #6	6th	11:40-12:55	0.006	1.060	0.022	0.430	0.270	0.220	0.125	0.139	1.0
" #7	6th	14:06-14:48	0.003	0.152	0.011	0.060	0.018	0.042	0.015	0.036	1.0
" #8	6th	16:00-20:40	0.001	0.004	-	-	0.003	-	0.002	-	1.0
" #9	12th	11:52-14:22	0.004	0.004	0.004	0.011	0.004	0.009	0.004	0.006	1.0
" #10	13th	14:00-15:00	0.016	0.098	0.037	0.064	0.029	0.051	0.025	0.050	1.0
" #11	13th	15:55-16:37	0.003	0.009	0.031	0.046	0.007	0.040	0.006	0.039	1.0
" #12	13th	16:40-11:25	0.006	0.013	0.003	0.090	0.013	0.076	0.008	0.023	3.0
" #13	14th	15:30-01:00	-	-	0.001	0.045	-	0.006	-	0.002	1.0
" #14	15th	13:35-10:50	0.006	0.096	0.001	0.305	0.043	0.100	0.009	0.014	3.0
" #15	18th	13:21-18:01	0.001	0.067	0.034	0.360	0.029	0.150	0.005	0.057	2.0

TABLE 5B CONTAMINANT LEVELS IN MARATHON UNITS PPM

SITE LOCATION	Date 1977 OCT.	Monitored Period	Instantaneous Concentration				30-Minute Maximum Average Concentration		Sample Period Average Concentration		Scan Time
			SO_2		TRS						
			Min.	Max.	Min.	Max.	SO_2	TRS	SO_2	TRS	(min.)
Marathon #16	18th	19:13-09:58	0.001	0.006	0.006	0.052	0.003	0.045	0.001	0.038	1.5
" #17	19th	10:17-11:17	0.002	0.023	0.009	0.025	0.012	0.020	0.007	0.019	1.0
" #18	19th	19:06-23:21	0.003	0.065	0.013	0.109	0.025	0.042	0.012	0.029	1.0
Average									0.016	0.036	
Standard Deviation									0.030	0.032	

TABLE 6A CONTAMINANT LEVELS IN MARATHON UNITS PPM

SITE LOCATION	Date 1977	Monitored Period	Instantaneous Concentration				30-Minute Maximum Average Concentration		Sample Period Average Concentration		Scan Time
			O_3		NO_x						
			Min.	Max.	Min.	Max.	O_3	NO_x	O_3	NO_x	(min.)
Marathon II #1	Sept. 27th	17:30-04:10	-	-	0.001	0.017	-	0.016	-	0.011	10
" #2	28th	17:30-07:20	0.001	0.041	0.023	0.097	0.035	0.089	0.009	0.036	10
" #3	Oct. 4th	12:17-21:02	0.009	0.036	0.001	0.855	0.033	0.390	0.028	0.101	1.0
" #4	4th	21:88-10:23	0.009	0.051	0.001	0.207	0.049	0.140	0.038	0.013	1.0
" #5	5th	11:13-13:43	0.006	0.020	0.009	0.646	0.018	0.480	0.016	0.247	1.0
" #6	6th	11:40-12:55	0.005	0.063	0.001	0.402	0.033	0.130	0.025	0.071	1.0
" #7	6th	14:06-14:48	0.006	0.027	0.023	0.066	0.018	0.032	0.018	0.031	1.0
" #8	6th	16:00-20:40	0.001	0.110	0.012	0.067	0.021	0.038	0.016	0.022	1.0
" #9	12th	11:52-14:22	0.011	0.031	-	-	0.022	-	0.019	-	1.0
" #10	13th	14:00-15:00	0.001	0.051	0.042	0.092	0.021	0.048	0.020	0.048	1.0
" #11	13th	15:55-16:37	0.001	0.059	0.040	0.061	0.024	0.045	0.023	0.044	1.0
" #12	13th	16:40-11:25	0.001	0.068	0.024	0.101	0.031	0.049	0.025	0.032	3.0
" #13	14th	15:30-01:00	0.001	0.061	0.021	0.101	0.028	0.056	0.013	0.036	1.0
" #14	15th	13:35-10:50	0.004	0.049	0.019	0.056	0.029	0.037	0.019	0.026	3.0
" #15	18th	13:21-18:01	0.005	0.030	0.007	0.469	0.028	0.160	0.026	0.048	2.0

TABLE 6B CONTAMINANT LEVELS IN MARATHON UNITS PPM

SITE LOCATION	Date 1977	Monitored Period	Instantaneous Concentration				30-Minute Maximum Average Concentration		Sample Period Average Concentration		Scan Time
			O_3		NO_x						
			Min.	Max.	Min.	Max.	O_3	NO_x	O_3	NO_x	(min.)
Marathon II #16	Oct. 18th	19:13-09:58	0.004	0.027	0.016	0.491	0.024	0.170	0.014	0.085	1.5
" #17	19th	10:17-11:17	0.008	0.020	0.019	0.714	0.018	0.094	0.018	0.069	1.0
" #18	19th	19:06-23:21	0.004	0.023	0.007	0.061	0.022	0.020	0.020	0.016	1.0
Average									0.020	0.055	
Standard Deviation									0.007	0.056	

08. DISCUSSION

Northwesterly and westerly winds, characteristic of the fall season in northwestern Ontario, prevailed throughout most of the survey period. Although several weather systems moved through the area during this time, the winds were often light (velocities less than 15 km/hr) and atmospheric conditions often favoured dispersion of airborne pollutants.

Since the American Can of Canada Limited kraft pulp mill was located on the leeward side of Peninsula Hill (over 300 m above sea level), the effective stack heights were often twice their physical heights. In addition, light westerly winds were often channelled along northwest and southwest directions as a consequence of the physical orographic modification imposed by Peninsula Hill. Since the populated zone of Marathon occupies approximately 2 km^2 due east of the mill, emissions were rarely carried into the town center. Because of these aforementioned atmospheric conditions, the majority of the monitoring sites were located either northeast or southwest of the mill (Highway #17 and the Shell Depot).

The following Standards, based on a 30-minute average concentration of gaseous pollutants as measured at points of impingement and as set out in Schedule 1, Regulation 15 of the Ontario Environmental Protection Act, will be discussed/compared in the ensuing discussion:

Pollutant	Standard*
SO_2	0.30 ppm
O_3	0.10 ppm
NO_x	0.27 ppm**

* Conversion from ug/m^3 to ppm was made under the following conditions; Temperature: 298°K (25°C); atmospheric pressure: 101.4 kPa.

** Expressed as concentrations of NO_2

The H_2S analyzers used during this survey were also sensitive to mercaptans and other malodorous sulphide compounds containing the HS^- group. Thus, the results are reported as total reduced sulphur (TRS) and expressed as concentrations of hydrogen sulphide. The Guideline for TRS, based on a 30-minute average concentration as measured at the point of impingement, is 0.027 ppm.

Eleven monitoring days were recorded between September 28th and October 19th and over 130 hours of data were accumulated at 18 monitoring sites.

Total Reduced Sulphur (TRS) -

TRS monitoring was carried out during 16 of the 18 monitoring periods and a summary of the analyzed data is presented in Table #5 , pages 18 and 19. From the 120 hours of TRS glc data acquired during this survey, the overall average glc was 0.036 ppm with an associated standard deviation of 0.032 ppm. More than one-half of the data resulted in 30-minute average glc's in excess of the TRS Guideline.

As anticipated, ambient air monitoring adjacent to the kraft pulp mill resulted in the highest concentrations of TRS. On October 6th, under light winds, monitoring in this area gave a maximum 30-minute average TRS glc of 0.22 ppm. (Marathon II #6, Figure #4 on page 32).

Significant concentrations of TRS were also detected along Highway #17, approximately 6 km north-northeast of the kraft pulp mill. Approximately 30 hours of data were acquired at this location and the results are depicted by monitoring periods Marathon II #3, 10, 11 and 12. The overall average glc of TRS at these four sites was 0.015 ppm with an associated standard

deviation of 0.010 ppm. The 30-minute maximum average glc's were found to be in the range 0.04 ppm to 0.10 ppm. As indicated by the relatively large standard deviation, wind directional analyses were very critical in ascertaining impingement zones for distant downwind locations. Nevertheless, the source was very well defined as shown by the wind-rose analyses for Marathon II #3, Map #3 on page 39.

Under northwesterly winds, which were recorded between October 14th and 19th, monitoring at the Shell Depot (1.4 km southeast of the kraft pulp mill) also resulted in significant glc's of TRS. The overall average glc , as recorded during monitoring periods Marathon II #13, 14, 15, 16 and 17, was 0.026 ppm with an associated standard deviation of 0.022 ppm. The maximum 30-minute average glc detected at this location was 0.15 ppm and the wind-rose analyses (for example, Marathon II #15, Figure #8 on page 36) points to the kraft pulp mill as being the major source of TRS.

Only monitoring period Marathon II #4 gave results indicative of air quality in downtown Marathon. During this period, the winds were brisk ($\simeq$ 20 km/hr) and westerly. The channelling effect imposed by Peninsula Hill was less pronounced and definite plume impingement was observed. For the 10 hours of monitoring at the Water Tower site, the overall average glc of TRS was 0.035 ppm. The 30-minute maximum average glc was 0.040 ppm. The wind-rose analyses for this monitoring period (Map #4 on page 40) clearly showed the kraft pulp mill to be the only possible source of TRS.

Due to the long downwind distance (14 km southeast of the kraft pulp mill) and the variable wind direction detected throughout the survey, only background TRS readings were obtained

at the Heron Bay Indian Reserve on the Pic River. The 30-minute maximum average glc of TRS was found to be 0.009 ppm (Marathon II #9, Table 5A on page 18). The concentration/time graph for this monitoring period is presented in Figure 5 on page 33.

Sulphur Dioxide (SO_2) -

Sulphur dioxide monitoring was carried out during 16 of the 18 monitoring periods and a summary of the analyzed data is presented in Table 5 on pages 18 and 19.

Essentially low concentrations of this gaseous pollutant were detected during this survey. For the 120 hours of data, the overall average glc of SO_2 was 0.016 ppm with an associated standard deviation of 0.030 ppm. At all monitoring sites, the 30-minute maximum average glc's were found to be less than the Standard.

The maximum glc of SO_2 was detected during monitoring period Marathon II #6. As mentioned earlier, this monitoring was carried out near the mill and the MAM unit was definitely in a plume impingement area. The winds were northerly and brisk. The maximum instantaneous and 30-minute average glc's of SO_2 were 1.06 ppm and 0.26 ppm, respectively. The concentration/time graph for this monitoring period is presented in Figure 4 on page 32.

The next highest glc of SO_2 was detected along Highway #17 during monitoring period Marathon II #3. The 30-minute maximum average glc of SO_2 detected during this period was 0.08 ppm.

The wind-rose analyses for monitoring periods Marathon II #4 and #18 (Maps 7 and 8 on pages 43 and 44) definitely show the kraft pulp mill as the only possible local SO_2 source.

Oxides of Nitrogen (NO_x) -

Monitoring of NO_x was carried out during 17 of the 18 monitoring periods and the statistical summary of the acquired data is presented in Table #6 on pages 20 and 21. From the 120 hours of data, the overall average glc was 0.055 ppm with an associated standard deviation 0.056 ppm.

Only 2 1/2 hours of data, collected during two different monitoring periods, resulted in 30-minute average glc's of NO_x in excess of the Standard. The highest 30-minute average glc was 0.55 ppm and was recorded in downtown Marathon during the noon-hour period on September 5th (Marathon II #5). The winds were calm (velocity $\simeq$ 5 km/hr) and an abrupt increase in carbon monoxide was also detected at the same time. Vehicular traffic was assumed to be the most probable source. (See concentration/time graph - Figure #3 on page 31.

Monitoring period, Marathon II #3 also depicted elevated NO_x glc's in this locale. The maximum 30-minute average glc at the point of impingement was 0.39 ppm and was detected between 20:00 and 20:45 hours. An increase in carbon monoxide glc during these 45 minutes once again suggested vehicular traffic as being the most probable source of this pollutant.

Ozone (O_3) -

Although the kraft pulp mill was not suspected as an O_3 source, O_3 was monitored during this survey so as to establish data on regional levels. Ozone was detected in low concentrations and a summary is presented in Table #6 on pages 20 and 21. The overall average glc of O_3 for the entire survey was 0.020 ppm with an associated standard deviation 0.007 ppm.

The highest 30-minute maximum average glc of O_3 was 0.049 ppm and this value was detected in downtown Marathon on October 4th as reported during monitoring period Marathon II #4.

09. APPENDIX

a) Figures:

#1	H_2S,	SO_2 &	NO_x	concentration/time	analyses	for Marathon II	#3
#2	"	"	"	"	"	"	#4
#3	"	"	"	"	"	"	#5
#4	"	"	"	"	"	"	#6
#5	"	"	"	"	"	"	#9
#6	"	"	"	"	"	"	#12
#7	"	"	"	"	"	"	#14
#8	"	"	"	"	"	"	#15
#9	"	"	"	"	"	"	#16
#10	"	"	"	"	"	"	#18

b) Maps:

#3	H_2S,	Wind-Rose	for	Marathon II	#3
#4	"	"	"	"	#4
#5	"	"	"	"	#15
#6	"	"	"	"	#18
#7	SO_2	"	"	"	#4
#8	"	"	"	"	#15

c) Processed Data Statistics

MARATHON II #3

FIGURE 1.

12:17 OCT 4 1977 SCAN= 60 SEC AVE= 30 MIN

HWY #17 & GULF STN. (54700-54010); 5.5KM & 35DEG/SOURCE

0.044	0.055	0.023	0.010	0.000	SRAD W/CM2
16	16	12	12	11	TEMP DEG C
61	58	74	77	79	HUM % REL
981	981	980	979	978	PRES MBAR

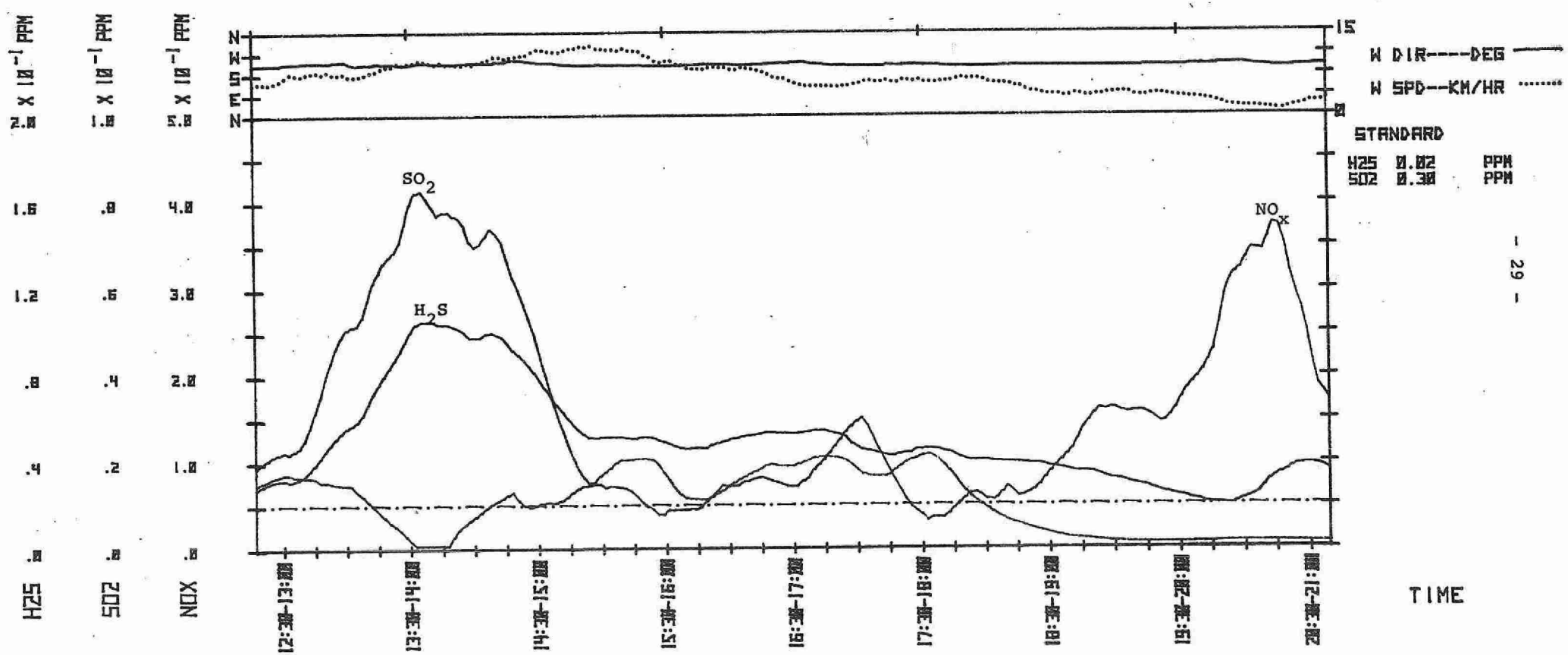


FIGURE 2.

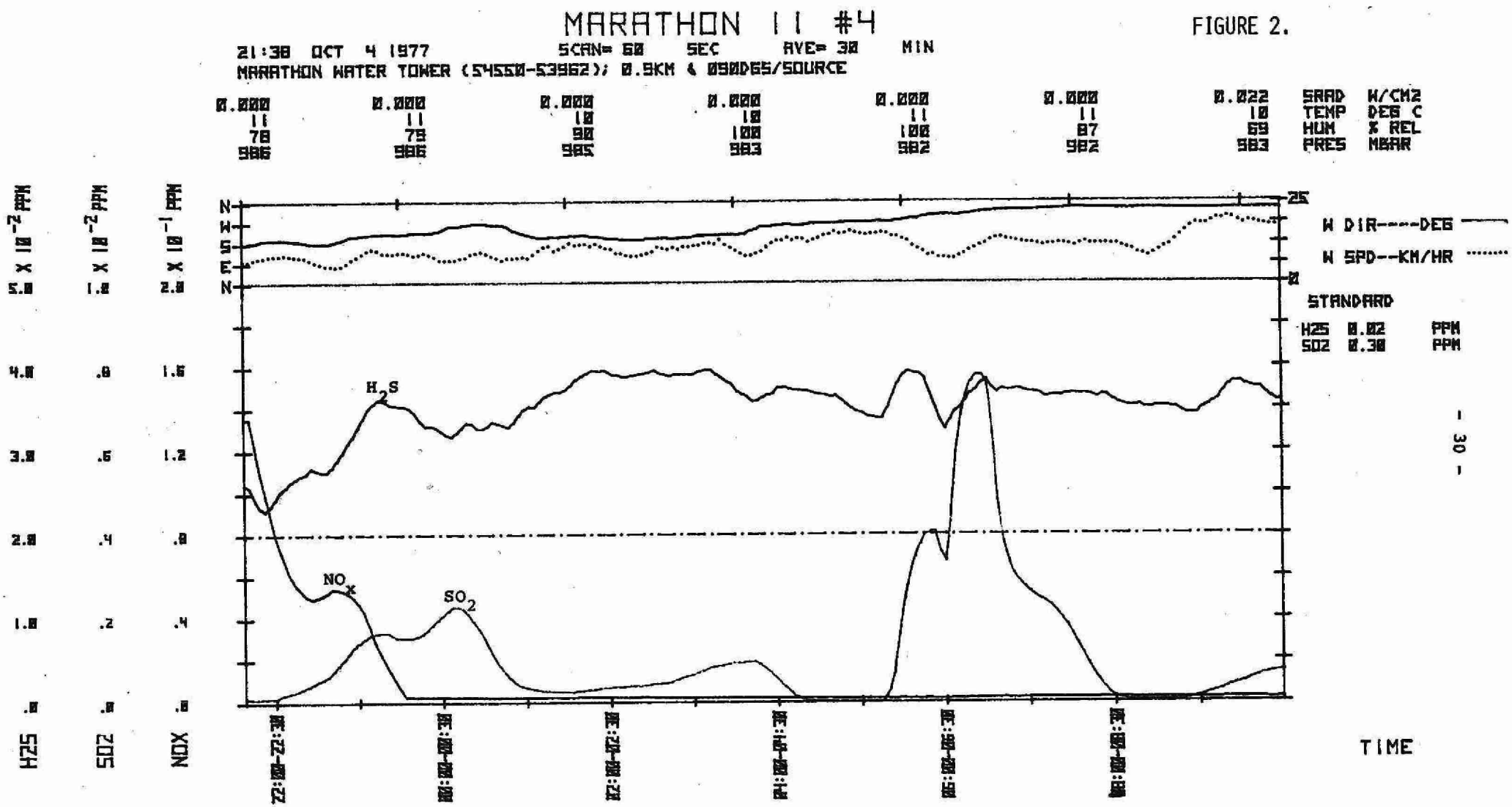

MARATHON II #4
21:38 OCT 4 1977
SCAN= 60 SEC
AVE= 30 MIN
MARATHON WATER TOWER (54550-53962); 0.5KM @ 090DEG/SOURCE
0.000 0.000 0.000 0.000 0.000 0.000 0.022 SRAD W/CM2
11 11 10 10 11 11 10 TEMP DEG C
78 79 90 100 100 87 69 HUM % REL
986 986 985 983 982 982 983 PRES MBAR
H25 X 10-2 PPM
SO2 X 10-2 PPM
NOX X 10-1 PPM
5.0 4.0 3.0 2.0 1.0
1.0 .8 .6 .4 .2
2.0 1.6 1.2 .8 .4
N E S W N
25 0
W DIR----DEG
W SPD--KM/HR
STANDARD
H2S 0.02 PPM
SO2 0.30 PPM
H2S
NOx
SO2
- 30 -
TIME

FIGURE 3.

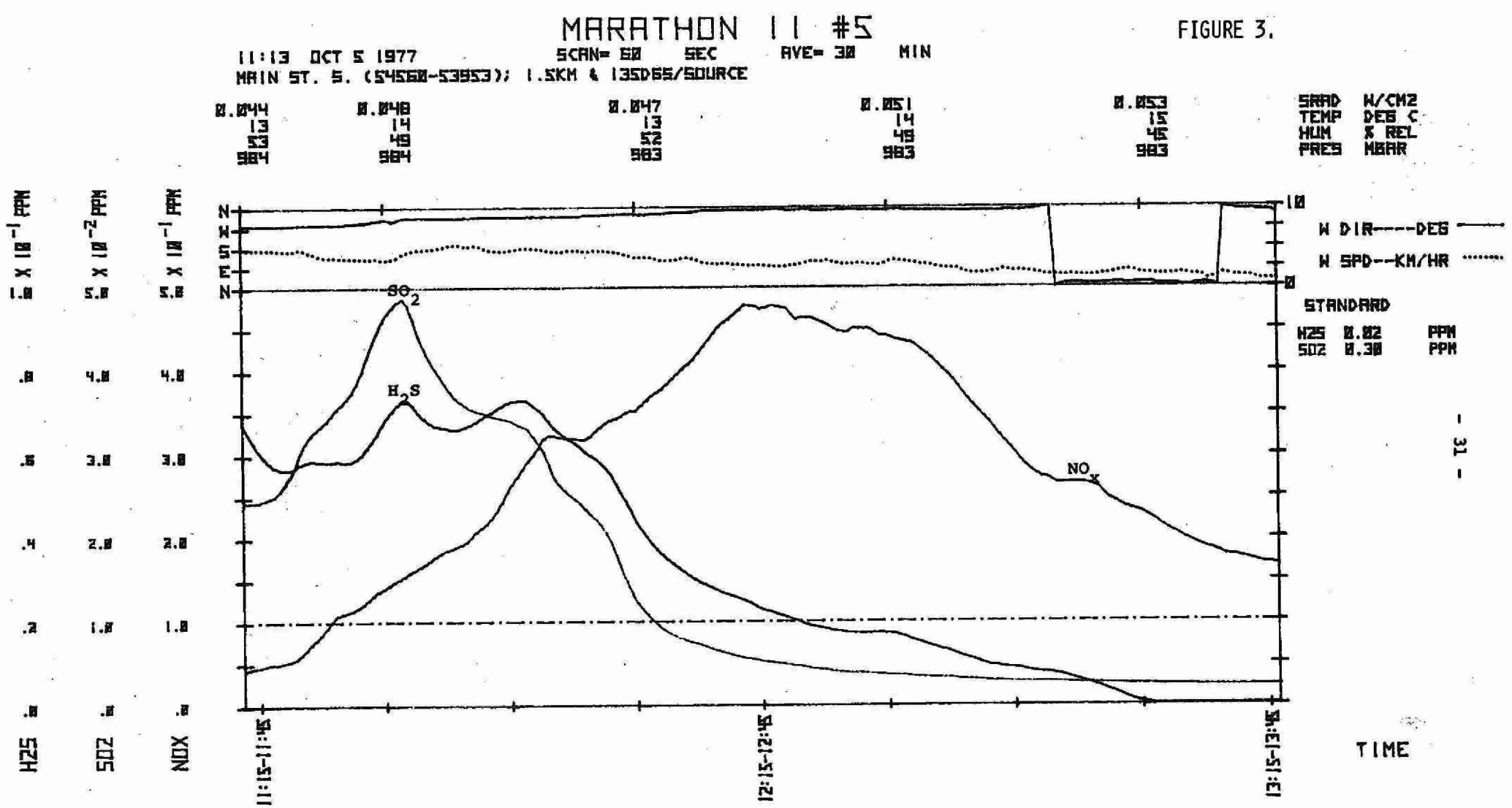

MARATHON II #5
11:13 OCT 5 1977
SCAN= 60 SEC
AVE= 30 MIN
MAIN ST. S. (54560-53953); 1.5KM @ 135DEG/SOURCE
0.044
13
53
984
0.048
14
49
984
0.047
13
52
983
0.051
14
49
983
0.053
15
46
983
SRAD W/CM2
TEMP DEG C
HUM % REL
PRES MBAR
1.0 X 10-1 PPM
5.0 X 10-2 PPM
5.0 X 10-1 PPM
H2S
SO2
NOX
W DIR----DEG
W SPD--KM/HR
STANDARD
H2S 0.02 PPM
SO2 0.30 PPM
SO2
H2S
NOX
11:15-11:45
12:15-12:45
13:15-13:45
TIME

FIGURE 4.

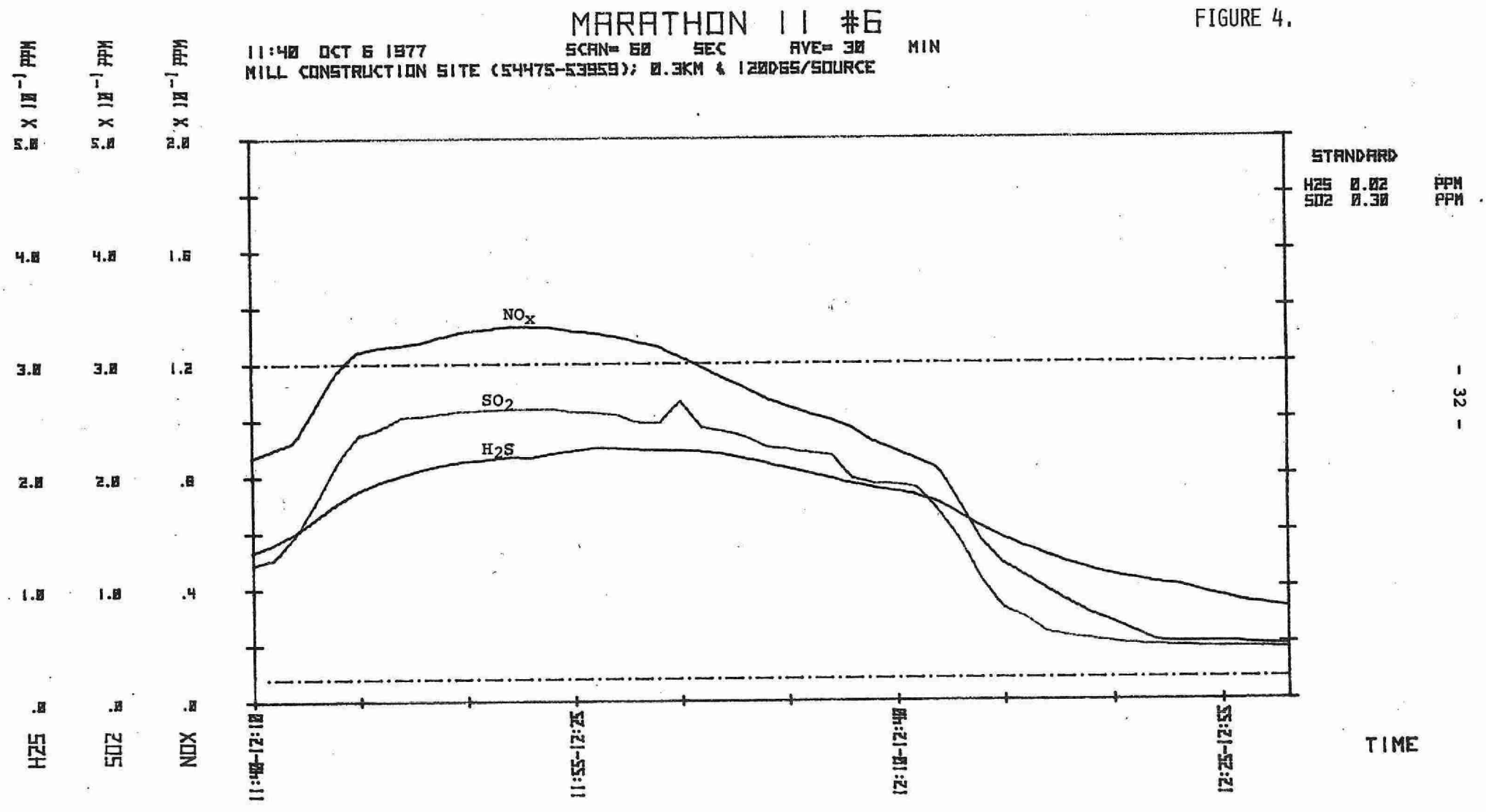
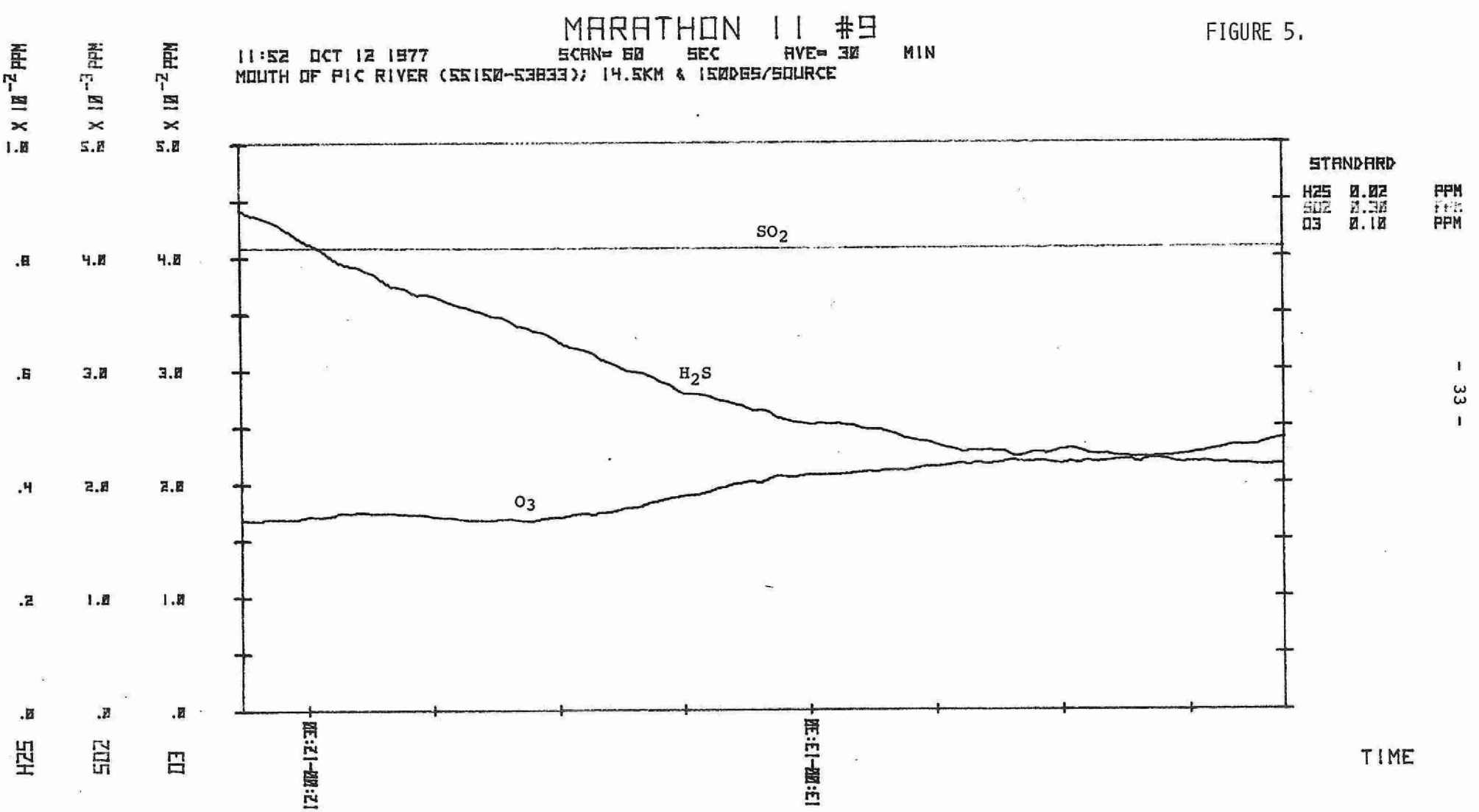

MARATHON II #6
11:40 OCT 6 1977
SCAN= 60 SEC
AVE= 30 MIN
MILL CONSTRUCTION SITE (54475-53959); 0.3KM & 120DEG/SOURCE
H2S
SO2
NOX
X 10⁻¹ PPM
5.0
4.0
3.0
2.0
1.0
.0
1.6
1.2
.8
.4
NOx
SO2
H2S
STANDARD
H2S 0.02 PPM
SO2 0.30 PPM
11:40-12:10
11:55-12:25
12:10-12:40
12:25-12:55
TIME

FIGURE 5.


MARATHON II #9
11:52 OCT 12 1977
SCAN= 60 SEC
AVE= 30 MIN
MOUTH OF PIC RIVER (55150-53833); 14.5KM & 150DGS/SOURCE
X 10^-2 PPM
X 10^-3 PPM
X 10^-2 PPM
1.0
5.0
5.0
.8
4.0
4.0
.6
3.0
3.0
.4
2.0
2.0
.2
1.0
1.0
.0
.0
.0
H25
SO2
O3
SO2
H2S
O3
STANDARD
H25 0.02 PPM
SO2 0.30 PPM
O3 0.10 PPM
12:00-12:30
13:00-13:30
TIME

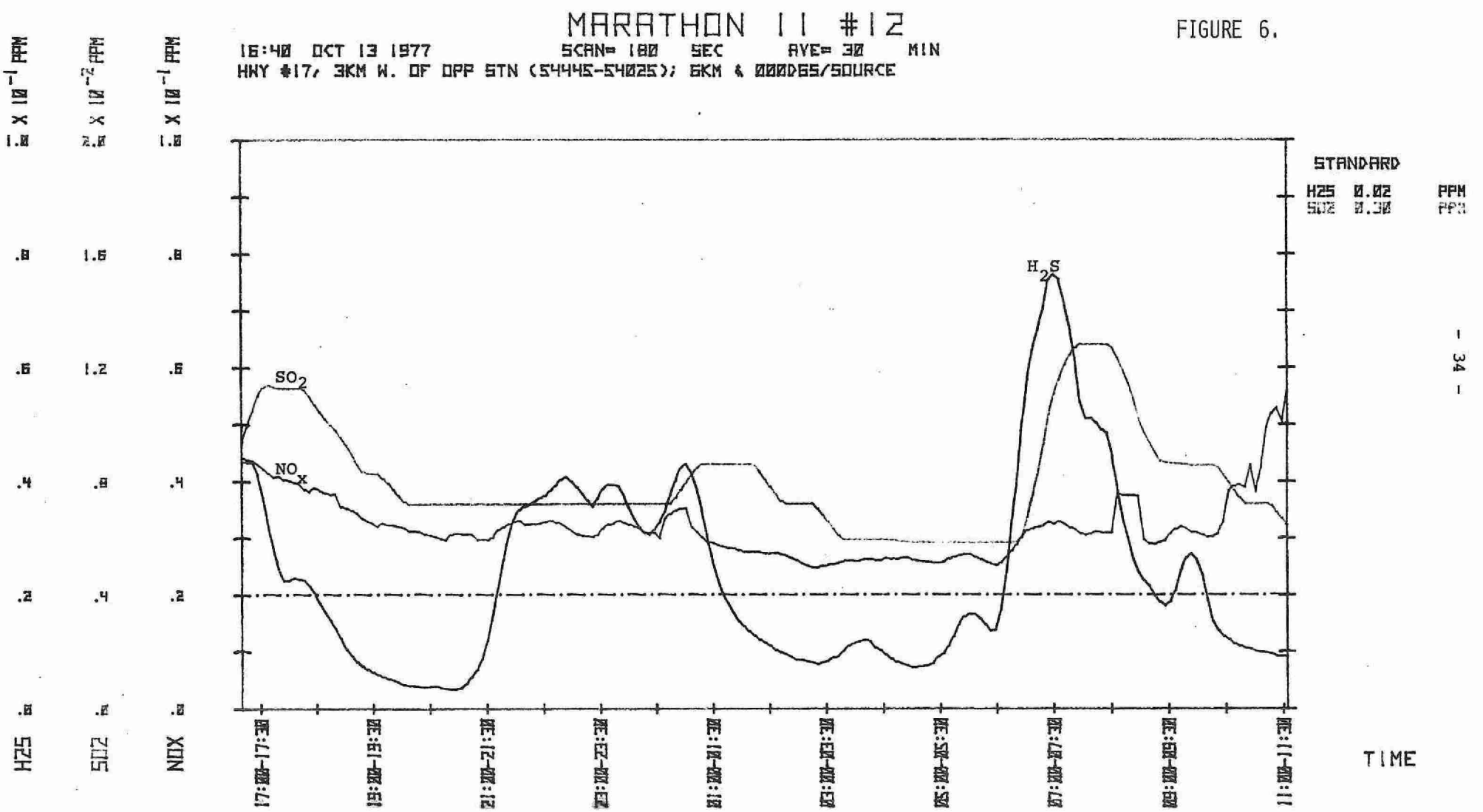
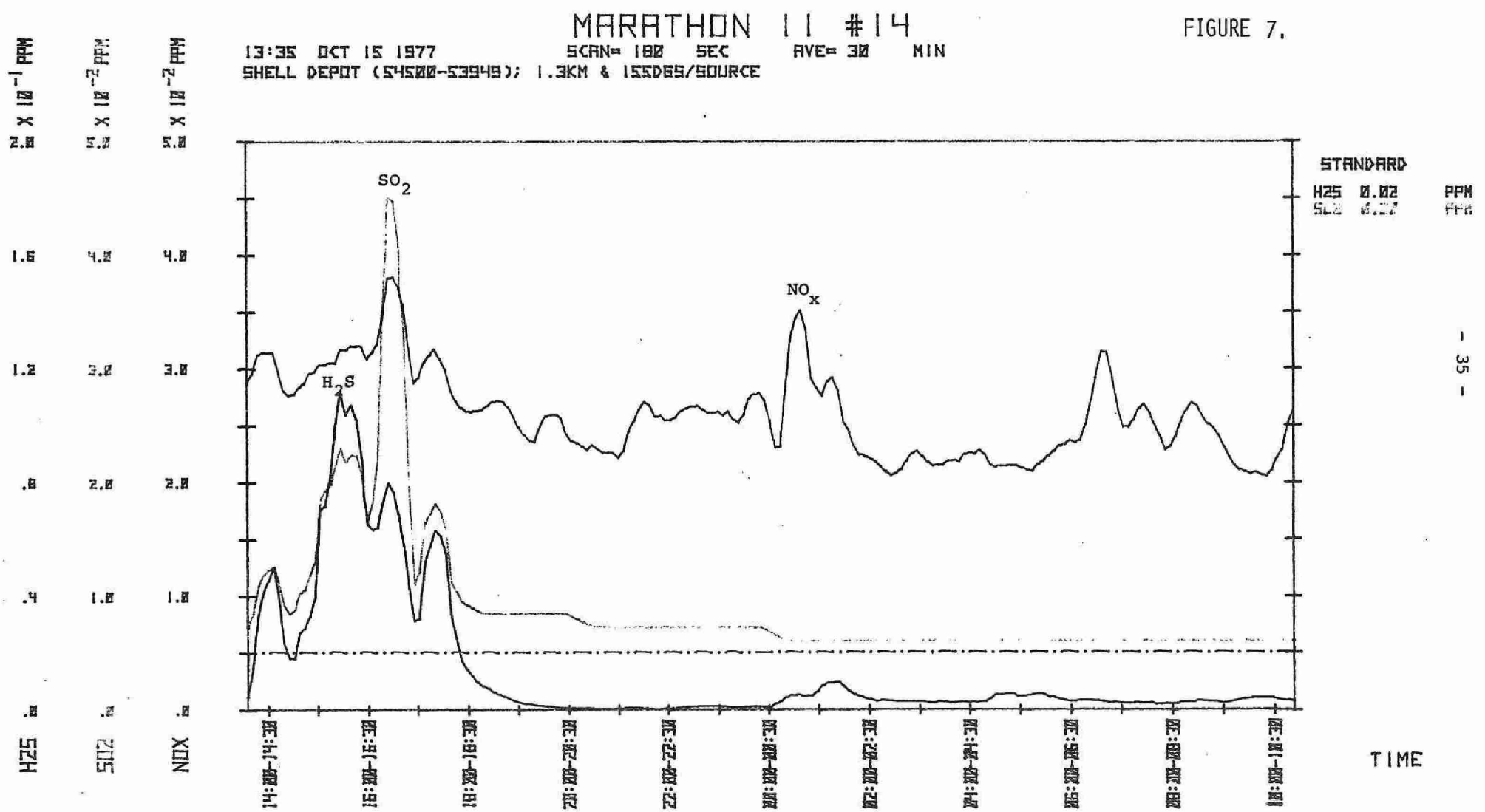

MARATHON II #12
16:40 OCT 13 1977
SCAN= 180 SEC
AVE= 30 MIN
HWY #17, 3KM W. OF OPP STN (54445-54025); 6KM & 000DEG/SOURCE
H25 1 X 10⁻¹ PPM
SO2 2 X 10⁻² PPM
NOX 1 X 10⁻¹ PPM
STANDARD
H25 0.02 PPM
SO2 0.10 PPM
H2S
SO2
NOX
TIME
17:00-17:30
19:00-19:30
21:00-21:30
23:00-23:30
01:00-01:30
03:00-03:30
05:00-05:30
07:00-07:30
09:00-09:30
11:00-11:30

FIGURE 6.

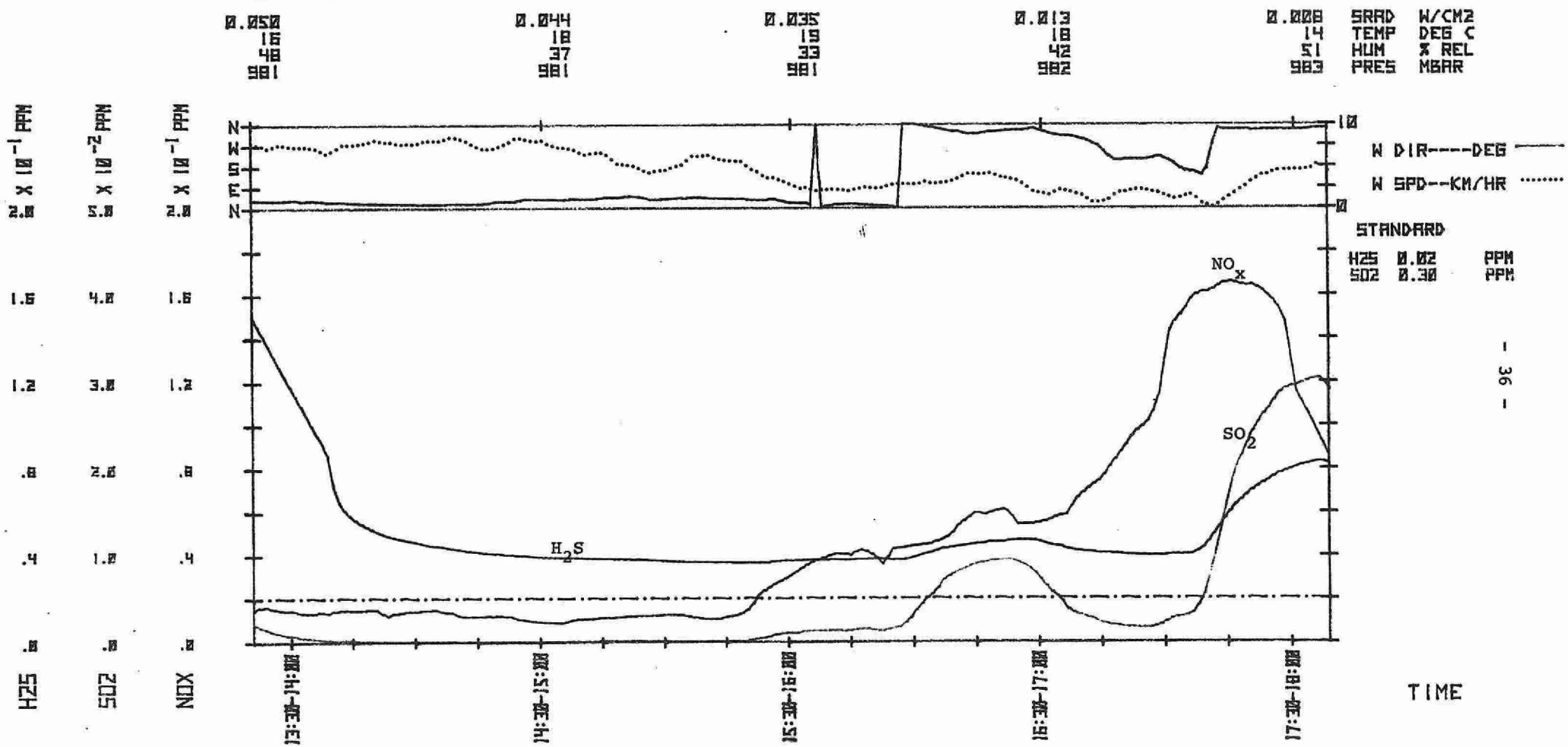

MARATHON II #14
13:35 OCT 15 1977
SCAN= 180 SEC
AVE= 30 MIN
SHELL DEPOT (545ØØ-539Ø9); 1.3KM & 155DEG/SOURCE
FIGURE 7.
STANDARD
H25 Ø.Ø2 PPM
SO2 Ø.1Ø PPM
SO2
NOx
H2S
H25
SO2
NOX
TIME
- 35 -

MARATHON II #15

FIGURE 8.

13:21 OCT 18 1977 SCAN= 120 SEC AVE= 30 MIN

HOWE ST. (END) (545100-539949); 1.4KM & 160DGS/SOURCE



MARATHON II #16

FIGURE 9.

19:13 OCT 18 1977 SCAN= 90 SEC AVE= 30 MIN

HOWE ST. (END) (545I0-53949); 1.4KM & I60D65/SOURCE

0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	SRAD	W/CM2
11	9	8	9	9	9	6	8	TEMP	DEG C
61	73	77	74	72	72	81	73	HUM	% REL
984	985	986	987	988	989	990	991	PRES	MBAR

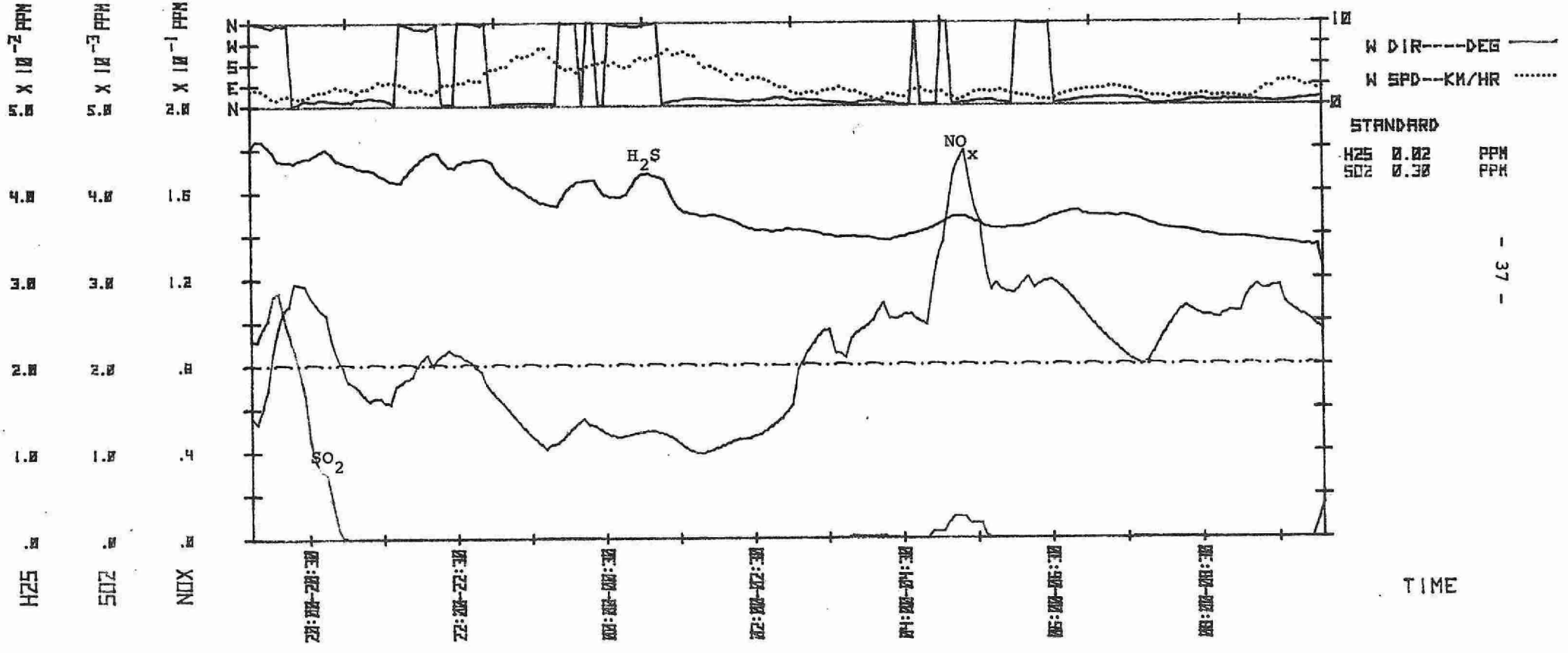
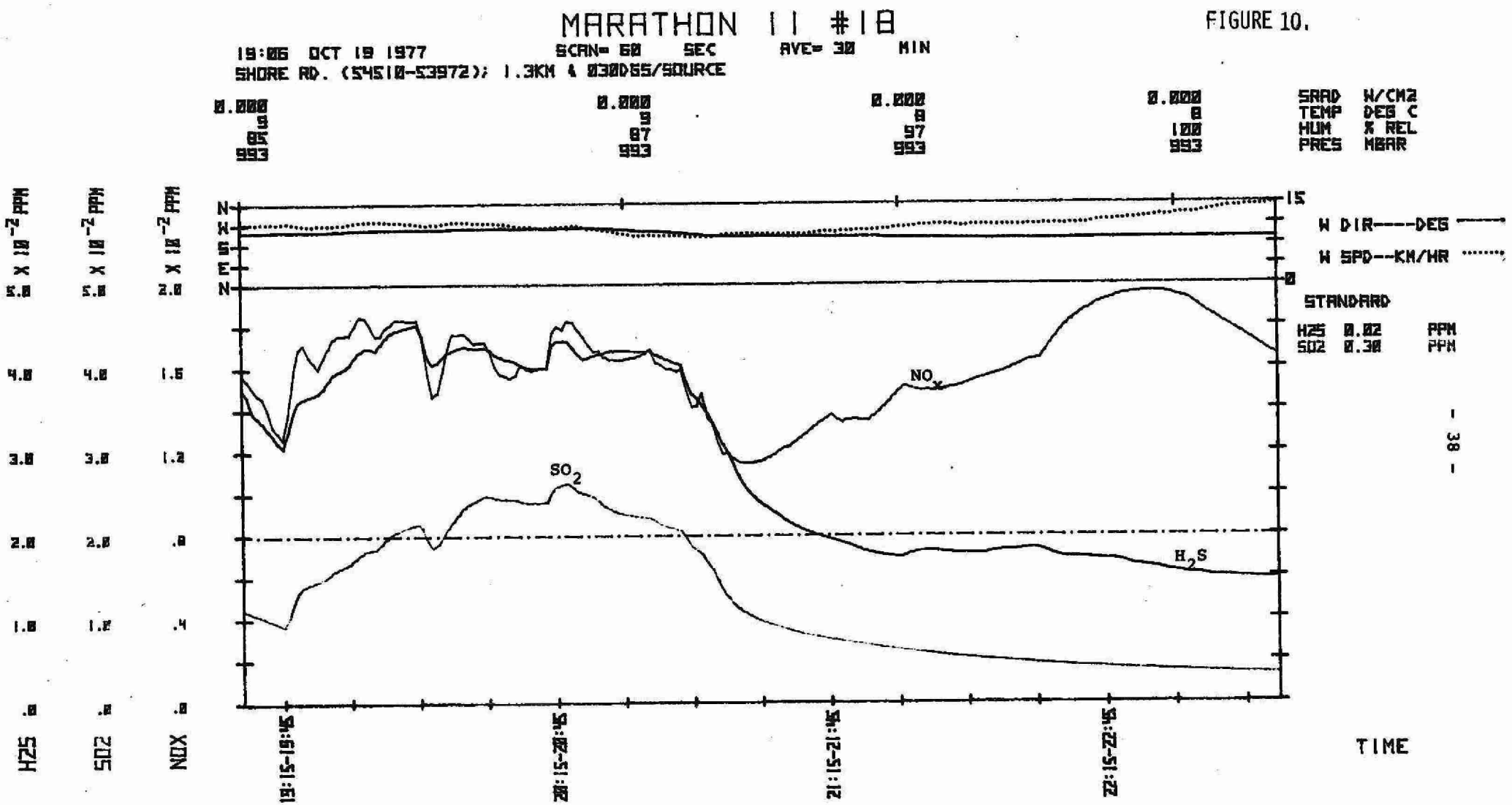


FIGURE 10.

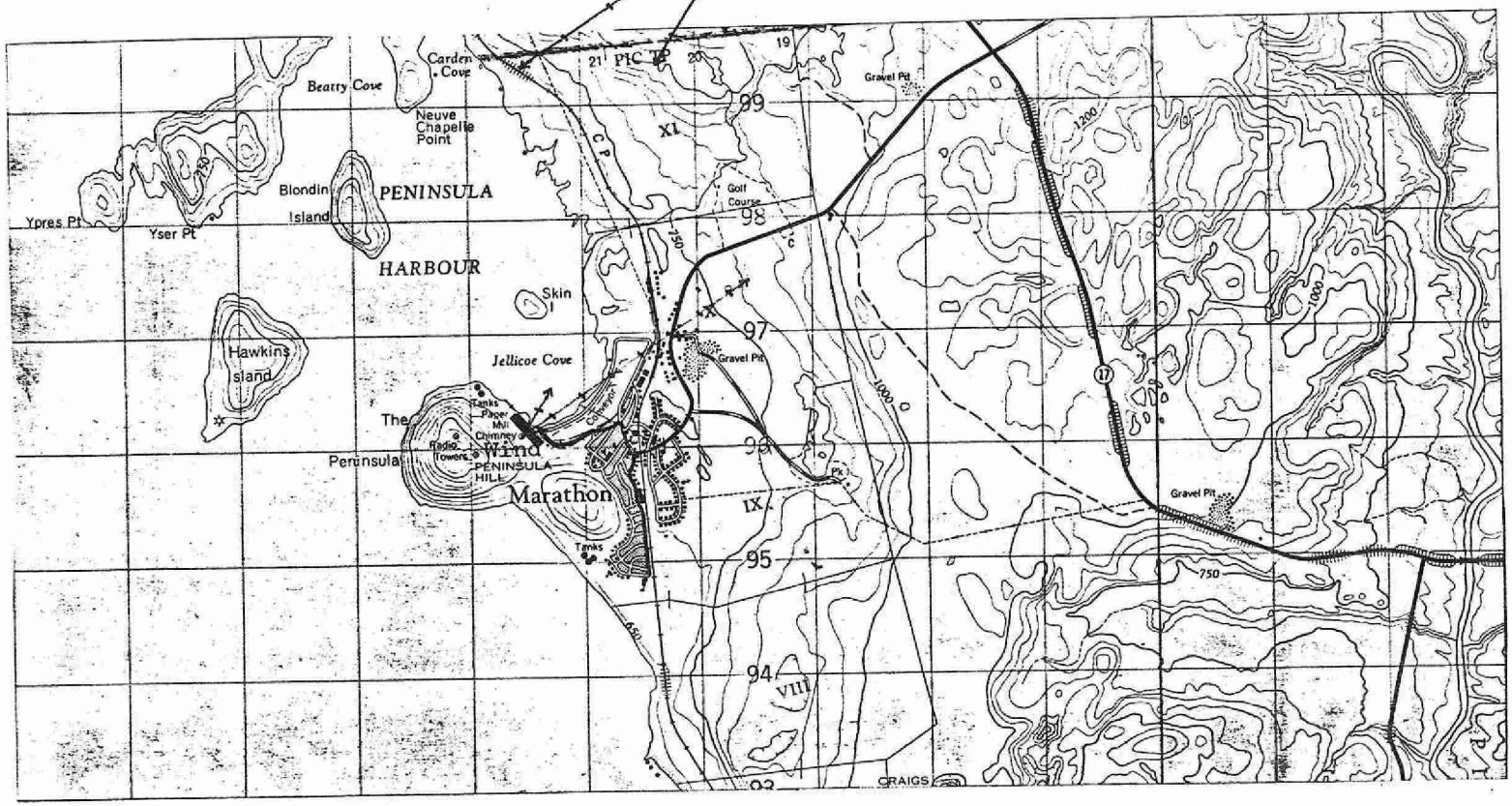

MARATHON II #18
19:06 OCT 19 1977
SCAN= 60 SEC
AVE= 30 MIN
SHORE RD. (545I0-53972); 1.3KM & 030DEG/SOURCE
0.000
9
85
993
0.000
9
87
993
0.000
9
97
993
0.000
8
100
993
SRAD W/CM2
TEMP DEG C
HUM % REL
PRES MBAR
N
N
E
S
S
N
W DIR----DEG
W SPD--KM/HR
STANDARD
H2S 0.02 PPM
SO2 0.30 PPM
NO$_x$
SO$_2$
H$_2$S
H2S
SO2
NOX
X 10^{-2} PPM
5.0
4.0
3.0
2.0
1.0
.0
1.5
1.2
.9
.6
.3
19:15-19:45
20:15-20:45
21:15-21:45
22:15-22:45
TIME
- 38 -

MAP #3

MARATHON II #3

12:17 OCT 4 1977 SCAN= 60 SEC AVE= 30 MIN
LENGTH= 0.6 HRS MINIMUM MEAN= 5.000000E-03 PPM
DELAY= 0 MIN WIND RANGE= 0 15 KM/HR
LOC: HWY #17 & GULF STN. (547000-5480(0)) 2.5KM & 350DEG/SOURCE

ARITHMETIC MEAN: H2S
1 DIV= 0.01 PPM
PREVAILING WINDS BLOWING TOWARDS:
1 DIV= 10

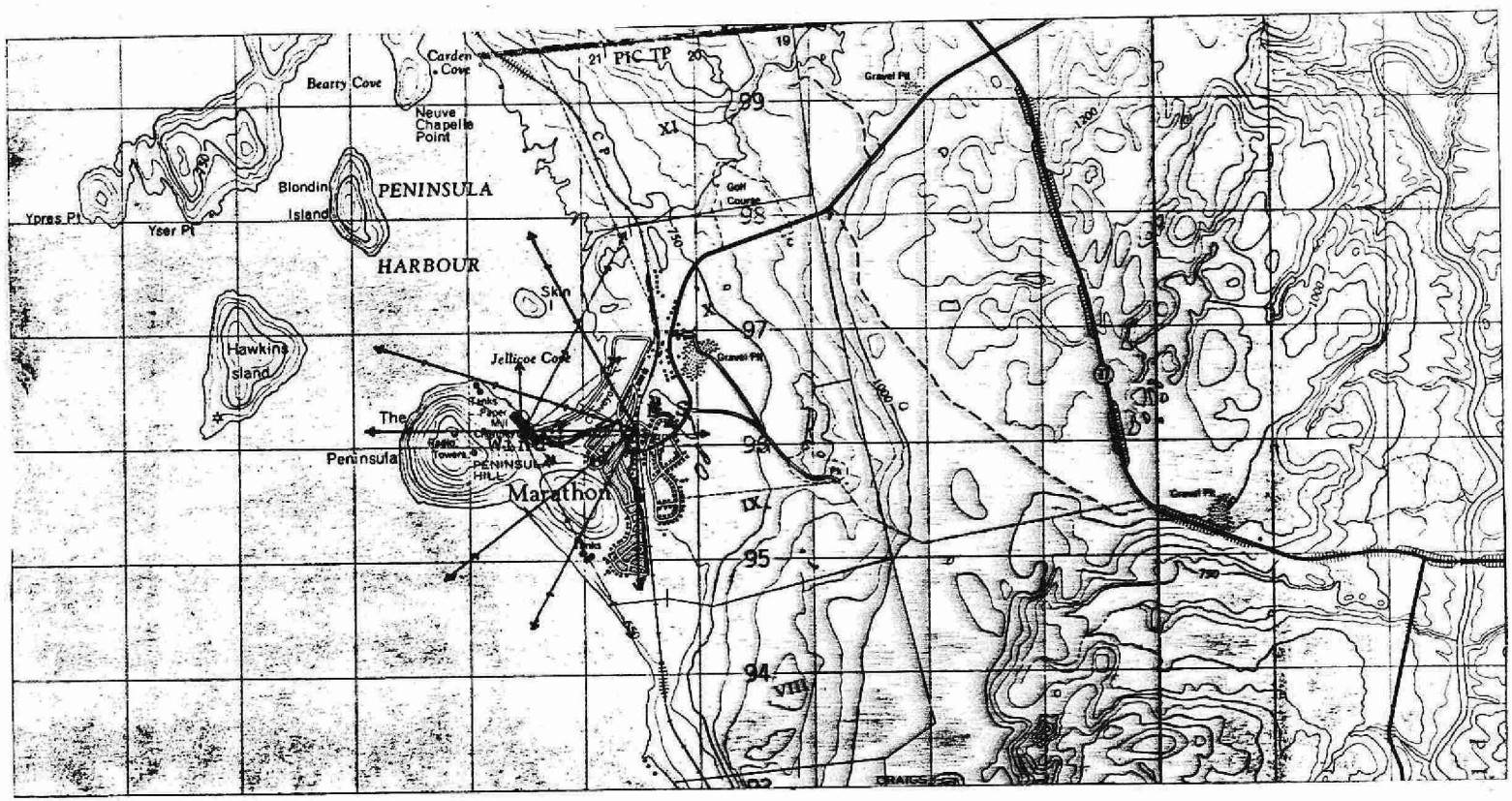


MARATHON II #4

MAP #4

21:38 OCT 4 1977 SCAN= 60 SEC AVE= 30 MIN
LENGTH= 12.0 HRS MINIMUM MEAN= 5.000000E-02 PPM
DELAY= 0 MIN WIND RANGE= 5 / 25 KM/HR
LOC: MARATHON WATER TOWER (548550-5388242) 0.8KM & 000DEG/SOURCE

ARITHMETIC MEAN: H2S
1 DIV= 0.01 PPM
PREVAILING WINDS BLOWING TOWARDS:
1 DIV= 10 %

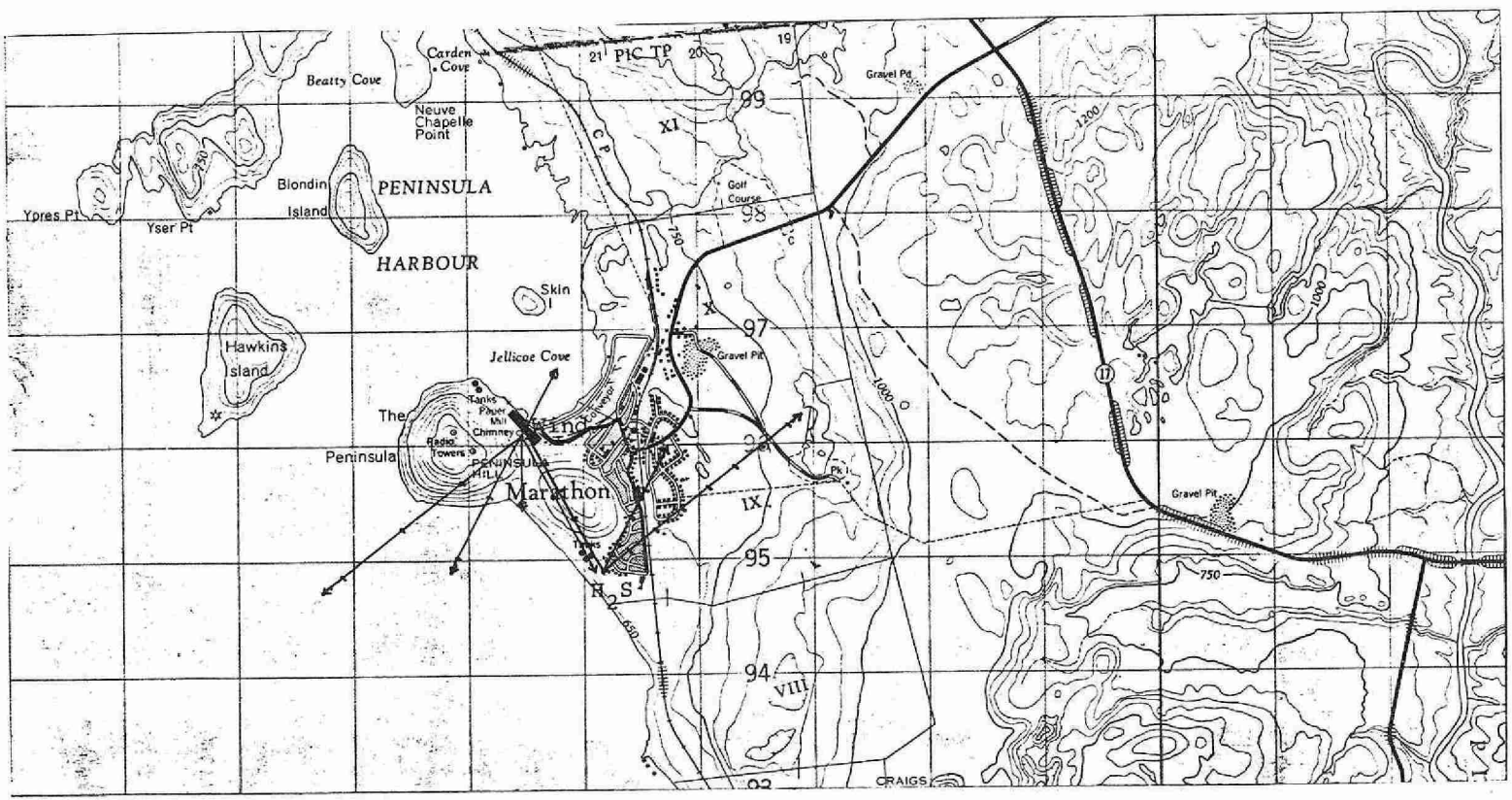


MAP #5

MARATHON II #15

13:21 OCT 18 1977 SCAN= 120 SEC AVE= 30 MIN
LENGTH= 4.0 HRS MINIMUM MEAN= 1.000000E-03 PPM
DELAY= 0 MIN WIND RANGE= 0 - 10 KM/HR
LOC: HOWE ST. (END) (54K10-538458); 1.4KM @ 180DEG/SOURCE

ARITHMETIC MEAN: H2S
1 DIV= 0.01 PPM
PREVAILING WINDS; BLOWING TOWARDS:
1 DIV= 10 %

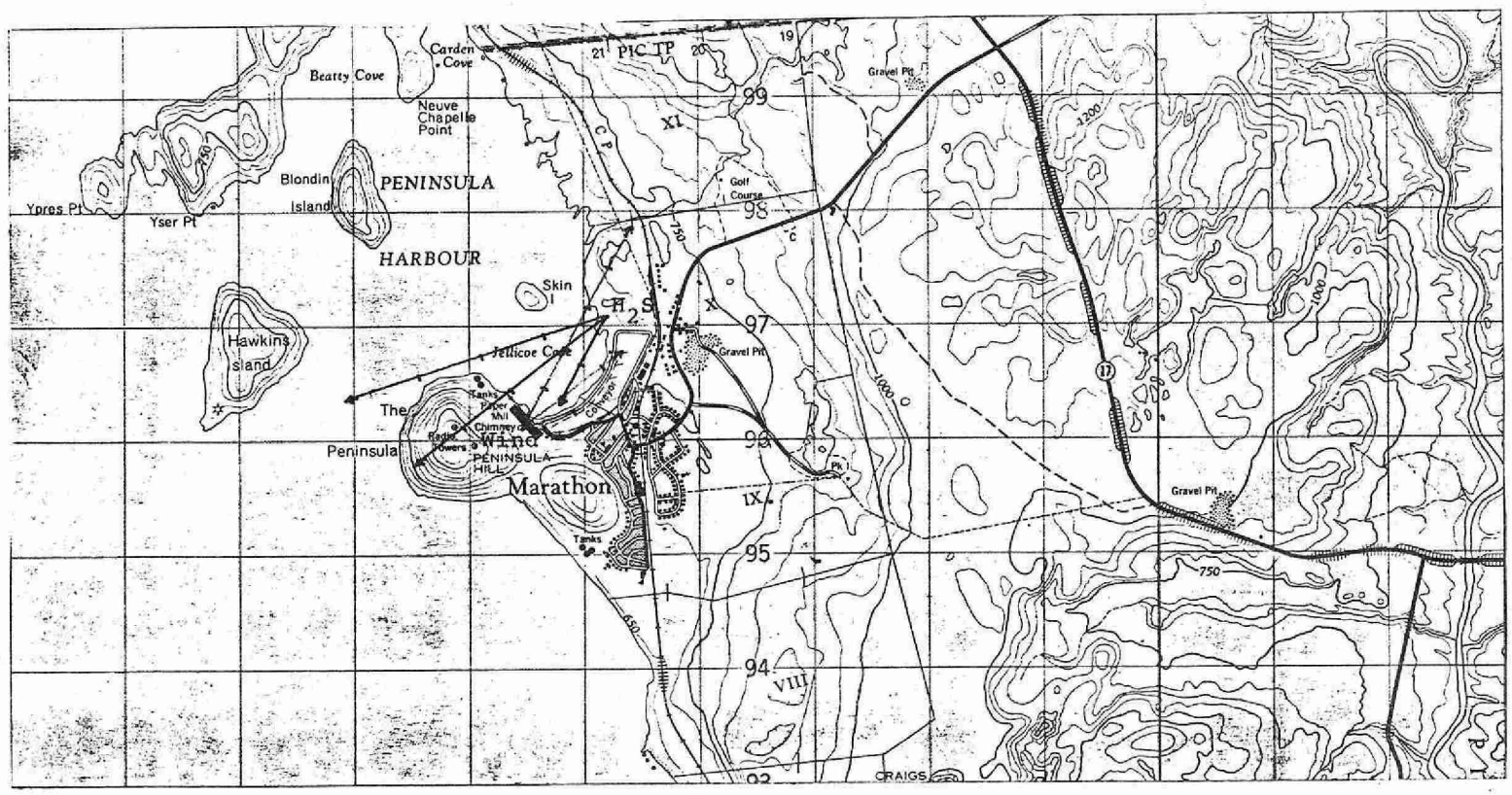


MARATHON II #18

MAP #6

18:00 OCT 16 1977 SCAN= 00 SEC AVE= 20 MIN
LENGTH= 4.0 HRS MINIMUM MEAN= 1.000000E-03 PPM
DELAY= 0 MIN WIND RANGE= 0 16 KM/HR
LOC: SHORE RD. (5456180-5397820) 1.2KM @ 000DEG/SOURCE

ARITHMETIC MEAN: H2S
1 DIV= 0.01 PPM
PREVAILING WINDS: BLOWING TOWARDS
1 DIV= 10 %

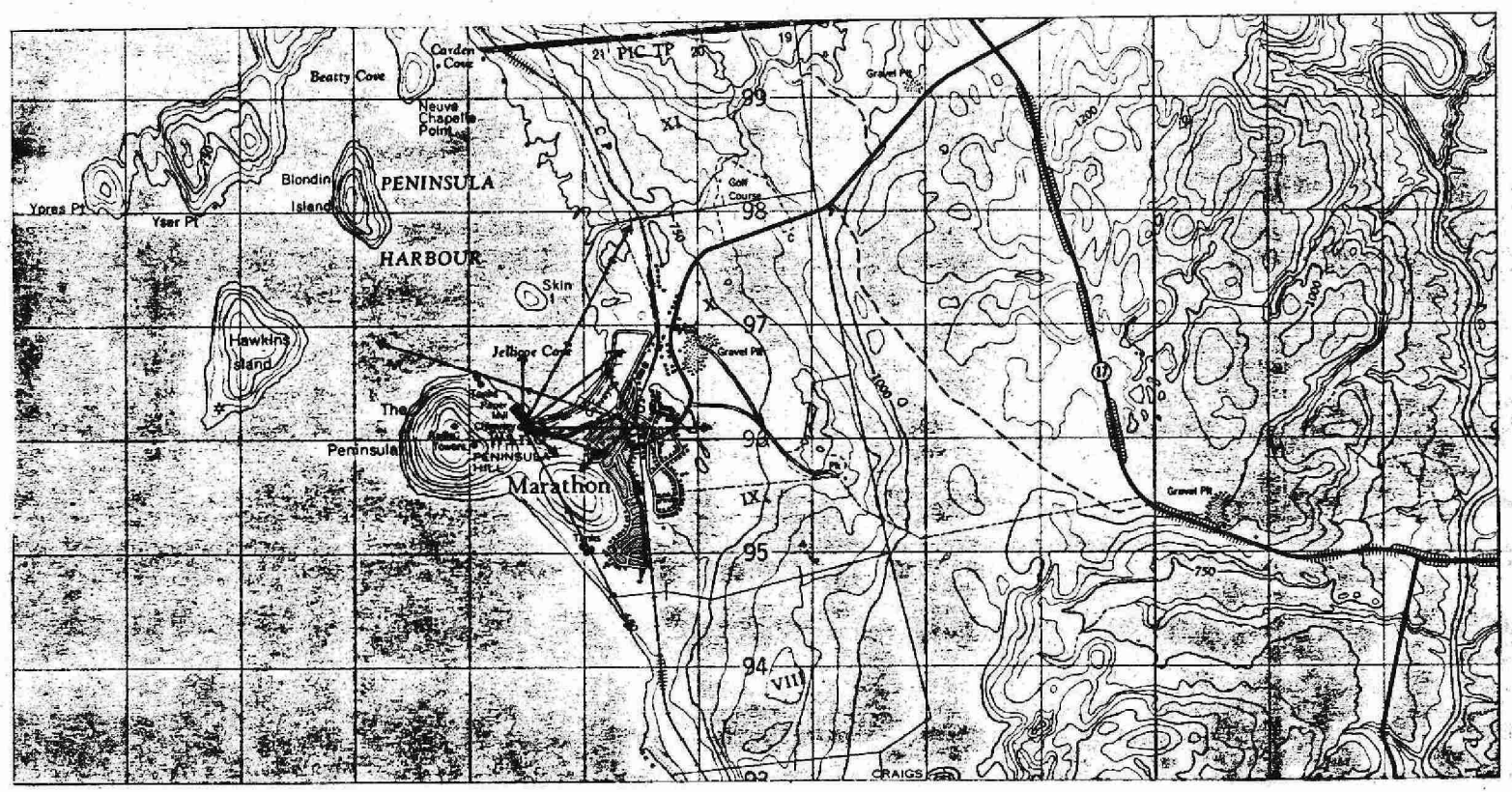


MARATHON II #4

MAP #7

21:38 OCT 4 1977 SCAN= 60 SEC AVE= 30 MIN
LENGTH= 12.0 HRS MINIMUM MEAN= 0.000000E-04 PPM
DELAY= 0 MIN WIND RANGE= 0 - 25 KM/HR
LOC: MARATHON WATER TOWER (48458-86982); 0.0KM @ 000DEG/SOURCE

ARITHMETIC MEAN: 502
1 DIV= 1.000000E-03 PPM
PREVAILING WINDS/ BLOWING TOWARDS:
1 DIV= 10 %

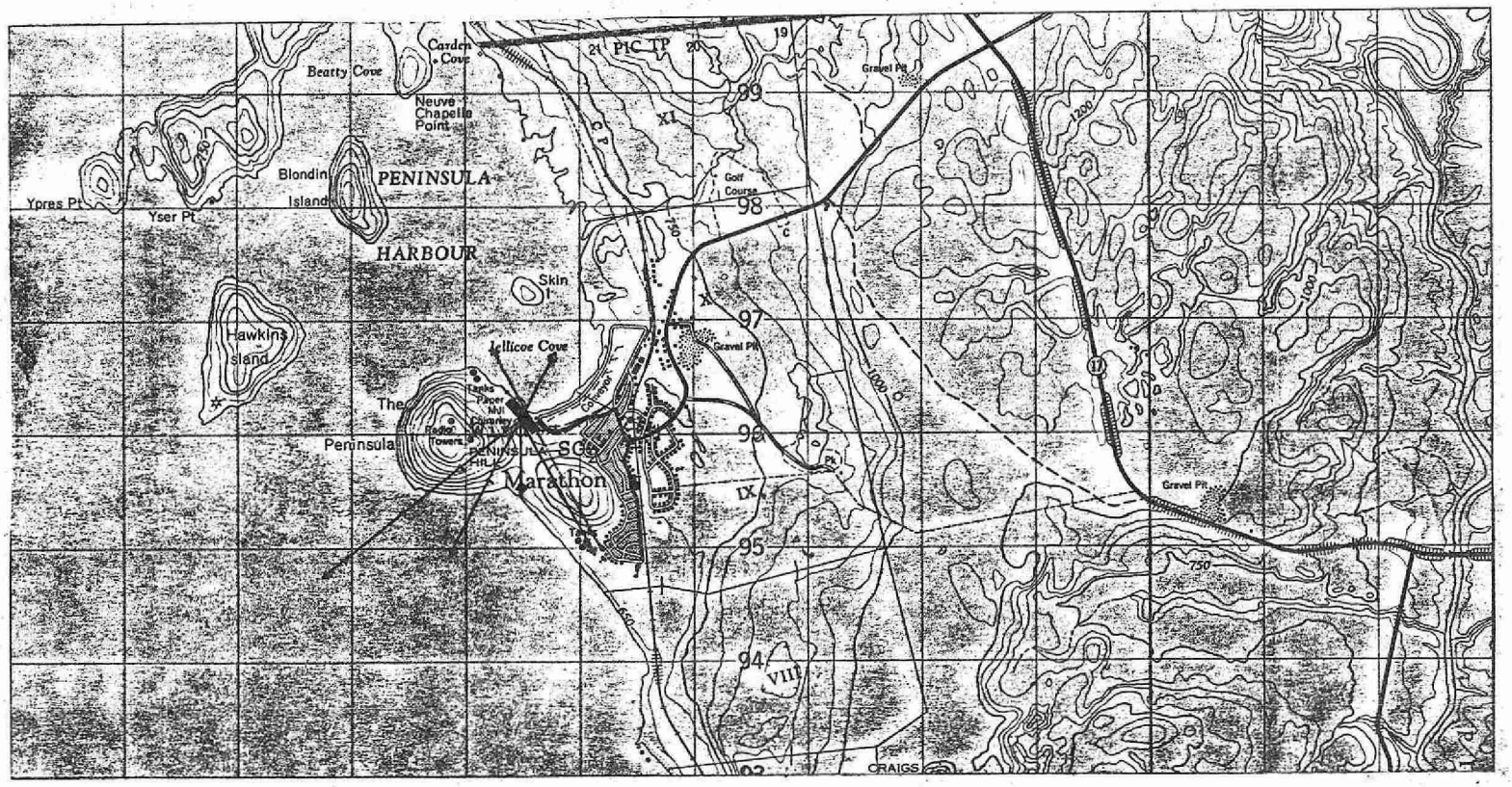


MARATHON II #15

MAP #8

13:21 OCT 18 1977 SCAN= 120 SEC AVE= 30 MIN
LENGTH= 4.8 HRS MINIMUM MEAN= 1.000000E-03 PPM
DELAY= 0 MIN WIND RANGE= 0 - 10 KM/HR
LOC: HOWE ST. (END) (645810-5385483); 1.4KM @ 180DEG/SOURCE

ARITHMETIC MEAN: SO2
1 DIV= 0.01 PPM
PREVAILING WINDS: BLOWING TOWARDS:
1 DIV= 10 %



MARATHON II #1

DATE: SEP 27 1977
SCAN TIME: 600 SEC
AVERAGING TIME: 30 MIN
LOCATION: PIC MOTEL (54720-53980): 3.3KM & 060DGS/SOURCE

TIME	H2S NO2	THC NO	SO2	NOX
17:30----18:00	8.8E-04 4.6E-02	6.0E-02 9.7E-04	3.8E-03	1.6E-02
17:40----18:10	1.0E-06 4.2E-02	2.9E-02 1.2E-03	3.8E-03	1.6E-02
17:50----18:20	1.0E-06 3.9E-02	1.4E-02 1.1E-03	3.8E-03	1.6E-02
18:00----18:30	1.0E-06 3.7E-02	1.8E-03 1.6E-03	3.8E-03	1.5E-02
18:10----18:40	1.0E-06 3.7E-02	1.8E-03 1.3E-03	3.8E-03	1.5E-02
18:20----18:50	1.0E-06 3.6E-02	1.0E-06 1.5E-03	3.8E-03	1.5E-02
18:30----19:00	1.0E-06 3.6E-02	1.0E-06 1.6E-03	3.8E-03	1.5E-02
18:40----19:10	1.0E-06 3.5E-02	1.0E-06 2.4E-03	3.8E-03	1.5E-02
18:50----19:20	1.0E-06 3.5E-02	1.0E-06 3.5E-03	3.8E-03	1.5E-02
19:00----19:30	1.0E-06 3.4E-02	1.0E-06 3.0E-03	3.8E-03	1.4E-02
19:10----19:40	1.0E-06 3.5E-02	1.0E-06 2.4E-03	3.8E-03	1.4E-02
19:20----19:50	1.0E-06 3.5E-02	1.0E-06 1.1E-03	3.8E-03	1.4E-02
19:30----20:00	1.0E-06 3.9E-02	1.0E-06 1.7E-03	3.8E-03	1.0E-02
19:40----20:10	1.0E-06 3.8E-02	1.0E-06 1.2E-03	3.8E-03	1.1E-02
19:50----20:20	1.0E-06 3.7E-02	1.0E-06 1.2E-03	3.8E-03	1.0E-02
20:00----20:30	1.0E-06 3.2E-02	1.0E-06 1.9E-03	3.8E-03	1.4E-02

MARATHON II #1, CONT'D

TIME	H2S NO2	THC NO	SO2	NOX
20:10----20:40	1.0E-06 3.2E-02	1.0E-06 3.3E-03	3.9E-03	1.3E-02
20:20----20:50	1.0E-06 3.2E-02	1.0E-06 3.3E-03	3.8E-03	1.3E-02
20:30----21:00	1.0E-06 3.2E-02	1.0E-06 2.2E-03	3.8E-03	1.3E-02
20:40----21:10	1.0E-06 3.1E-02	1.0E-06 1.6E-03	3.8E-03	1.2E-02
20:50----21:20	1.0E-06 3.1E-02	1.0E-06 1.7E-03	3.8E-03	1.2E-02
21:00----21:30	1.0E-06 3.1E-02	1.0E-06 1.4E-03	3.8E-03	1.2E-02
21:10----21:40	1.0E-06 3.1E-02	1.0E-06 1.4E-03	3.8E-03	1.2E-02
21:20----21:50	1.0E-06 3.0E-02	1.0E-06 2.5E-03	3.8E-03	1.2E-02
21:30----22:00	1.0E-06 3.0E-02	1.0E-06 4.1E-03	3.8E-03	1.2E-02
21:40----22:10	1.0E-06 3.0E-02	1.0E-06 3.4E-03	3.8E-03	1.2E-02
21:50----22:20	1.0E-06 3.0E-02	1.0E-06 2.1E-03	3.8E-03	1.2E-02
22:00----22:30	1.0E-06 2.9E-02	1.0E-06 5.3E-04	3.8E-03	1.2E-02
22:10----22:40	1.0E-06 2.9E-02	1.0E-06 1.0E-03	3.8E-03	1.2E-02
22:20----22:50	1.0E-06 2.8E-02	1.0E-06 8.4E-04	3.8E-03	1.1E-02
22:30----23:00	1.0E-06 2.8E-02	1.0E-06 8.4E-04	3.8E-03	1.1E-02
22:40----23:10	1.0E-06 2.7E-02	1.0E-06 4.1E-04	3.8E-03	1.1E-02
22:50----23:20	1.0E-06 2.7E-02	1.0E-06 8.8E-04	3.8E-03	1.1E-02
23:00----23:30	1.0E-06 2.5E-02	1.0E-06 1.2E-03	3.8E-03	1.0E-02
23:10----23:40	1.3E-04 2.4E-02	1.0E-06 1.7E-03	3.8E-03	9.7E-03

MARATHON II #1, CONT'D

TIME	H2S NO2	THC NO	SO2	NOX
23:20-----23:50	2.3E-04 2.4E-02	1.0E-06 1.4E-03	3.8E-03	9.5E-03
23:30-----00:00	6.7E-04 2.3E-02	1.0E-06 2.1E-03	3.8E-03	9.2E-03
23:40-----00:10	8.0E-04 2.3E-02	1.0E-06 1.8E-03	3.8E-03	9.2E-03
23:50-----00:20	1.9E-03 2.3E-02	1.0E-06 2.1E-03	3.8E-03	8.8E-03
00:00-----00:30	1.9E-03 2.3E-02	1.0E-06 1.1E-03	3.3E-03	8.7E-03
00:10-----00:40	3.0E-03 2.2E-02	1.0E-06 9.7E-04	3.8E-03	8.7E-03
00:20-----00:50	3.1E-03 2.2E-02	1.0E-06 1.5E-03	3.9E-03	8.8E-03
00:30-----01:00	4.7E-03 2.2E-02	1.0E-06 1.8E-03	3.8E-03	8.7E-03
00:40-----01:10	4.9E-03 2.1E-02	1.0E-06 1.9E-03	3.8E-03	8.7E-03
00:50-----01:20	5.3E-03 2.1E-02	1.0E-06 1.1E-03	3.8E-03	8.8E-03
01:00-----01:30	4.7E-03 2.1E-02	1.0E-06 7.3E-04	3.8E-03	8.6E-03
01:10-----01:40	4.8E-03 2.1E-02	1.0E-06 5.9E-04	3.8E-03	8.4E-03
01:20-----01:50	4.7E-03 2.0E-02	1.0E-06 8.3E-04	3.8E-03	8.2E-03
01:30-----02:00	4.7E-03 2.0E-02	1.0E-06 1.2E-03	3.8E-03	8.3E-03
01:40-----02:10	5.3E-03 2.0E-02	1.0E-06 1.2E-03	3.8E-03	8.3E-03
01:50-----02:20	5.5E-03 2.0E-02	1.0E-06 1.2E-03	3.8E-03	8.2E-03
02:00-----02:30	5.8E-03 2.0E-02	1.0E-06 1.1E-03	3.8E-03	8.3E-03
02:10-----02:40	5.5E-03 2.0E-02	1.0E-06 1.3E-03	3.8E-03	8.3E-03
02:20-----02:50	6.3E-03 2.0E-02	1.0E-06 1.5E-03	3.8E-03	8.4E-03

MARATHON II #1, CONT'D

TIME	H2S NO2	THC NO	SO2	NOX
02:30-----03:00	6.6E-03 2.0E-02	1.0E-06 1.5E-03	3.8E-03	8.3E-03
02:40-----03:10	6.8E-03 2.0E-02	1.0E-06 1.6E-03	3.8E-03	8.4E-03
02:50-----03:20	8.2E-03 2.0E-02	1.0E-06 1.1E-03	3.8E-03	8.5E-03
03:00-----03:30	8.2E-03 2.1E-02	1.0E-06 1.2E-03	3.8E-03	5.7E-03
03:10-----03:40	9.8E-03 2.1E-02	1.0E-06 1.7E-03	3.8E-03	5.7E-03
03:20-----03:50	9.0E-03 2.1E-02	1.0E-06 2.4E-03	3.8E-03	5.9E-03
03:30-----04:00	9.9E-03 2.0E-02	1.0E-06 2.5E-03	3.8E-03	8.8E-03
03:40-----04:10	9.9E-03 2.0E-02	1.0E-06 2.2E-03	3.8E-03	8.6E-03

STATISTICS

NUMBER OF READINGS 64

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	1.00E-06	1.18E-02	2.43E-03	3.40E-03	4.32E-05	5.77E+01
THC	1.00E-06	9.42E-02	2.90E-03	1.39E-02	1.91E-06	1.3CE+01
SO2	3.75E-03	3.81E-03	3.78E-03	1.72E-05	3.78E-03	1.00E+00
NOX	1.00E-06	1.67E-02	1.09E-02	3.08E-03	9.23E-03	3.83E+00
NO2	1.93E-02	5.10E-02	2.80E-02	7.64E-03	2.70E-02	1.30E+00
NO	1.00E-06	5.22E-03	1.64E-03	1.23E-03	1.16E-03	3.12E+00

MARATHON II #2

DATE: SEP 28 1977
SCAN TIME: 600 SEC
AVERAGING TIME: 30 MIN
LOCATION: PIC MOTEL (54720-53980): 3.3KM & 060DGS/SOURCE

TIME	THC NO2	THC-CH4 NO	CH4 OZONE	NOX
17:30----18:00	4.6E+00 3.4E-02	1.6E+00 1.8E-02	1.1E+00 1.5E-02	8.9E-02
17:40----18:10	3.1E+00 2.9E-02	9.5E-01 1.7E-02	1.1E+00 2.6E-02	7.9E-02
17:50----18:20	2.1E+00 2.4E-02	4.9E-01 1.5E-02	1.1E+00 3.5E-02	7.0E-02
18:00----18:30	1.8E+00 2.1E-02	3.4E-01 1.4E-02	1.1E+00 2.4E-02	6.4E-02
18:10----18:40	1.7E+00 1.8E-02	2.7E-01 1.3E-02	1.1E+00 1.2E-02	5.9E-02
18:20----18:50	1.6E+00 1.7E-02	2.4E-01 1.3E-02	1.1E+00 5.7E-03	5.6E-02
18:30----19:00	1.6E+00 1.6E-02	2.4E-01 1.2E-02	1.1E+00 3.9E-03	5.3E-02
18:40----19:10	1.6E+00 1.5E-02	2.7E-01 1.2E-02	1.1E+00 5.6E-03	5.2E-02
18:50----19:20	1.6E+00 1.4E-02	2.7E-01 1.2E-02	1.1E+00 5.8E-03	5.1E-02
19:00----19:30	1.7E+00 1.3E-02	3.0E-01 1.1E-02	1.1E+00 5.8E-03	4.9E-02
19:10----19:40	1.7E+00 1.2E-02	2.8E-01 1.1E-02	1.1E+00 4.1E-03	4.8E-02
19:20----19:50	1.6E+00 1.2E-02	2.7E-01 1.1E-02	1.0E+00 1.0E-06	4.7E-02
19:30----20:00	1.6E+00 1.3E-02	2.3E-01 1.1E-02	1.0E+00 2.0E-03	4.7E-02
19:40----20:10	1.6E+00 1.3E-02	2.4E-01 1.1E-02	1.0E+00 2.0E-03	4.6E-02
19:50----20:20	1.6E+00 1.2E-02	2.4E-01 1.0E-02	1.0E+00 2.0E-03	4.6E-02
20:00----20:30	1.7E+00 1.2E-02	2.9E-01 1.0E-02	1.0E+00 8.4E-03	4.4E-02

MARATHON II #2, CONT'D

TIME	THC NO2	THC-CH4 NO	CH4 O2ONE	NOX
20:10----20:40	1.7E+00 1.1E-02	2.7E-01 1.0E-02	9.9E-01 1.2E-02	4.3E-02
20:20----20:50	1.6E+00 1.1E-02	2.6E-01 9.8E-03	9.8E-01 2.0E-02	4.2E-02
20:30----21:00	1.5E+00 1.0E-02	2.0E-01 9.6E-03	9.7E-01 1.1E-02	4.1E-02
20:40----21:10	1.4E+00 9.8E-03	1.9E-01 9.4E-03	9.5E-01 1.7E-02	4.0E-02
20:50----21:20	1.5E+00 9.2E-03	2.0E-01 9.4E-03	9.3E-01 1.6E-02	3.9E-02
21:00----21:30	1.5E+00 9.0E-03	2.4E-01 9.3E-03	9.2E-01 1.7E-02	3.9E-02
21:10----21:40	1.5E+00 9.2E-03	2.4E-01 9.2E-03	9.2E-01 1.7E-02	3.8E-02
21:20----21:50	1.5E+00 9.2E-03	2.3E-01 9.1E-03	9.0E-01 1.1E-02	3.8E-02
21:30----22:00	1.4E+00 8.9E-03	1.9E-01 9.0E-03	8.9E-01 1.0E-02	3.7E-02
21:40----22:10	1.5E+00 8.6E-03	2.1E-01 8.9E-03	8.8E-01 2.4E-04	3.7E-02
21:50----22:20	1.5E+00 8.5E-03	2.1E-01 8.8E-03	8.7E-01 3.0E-03	3.7E-02
22:00----22:30	1.5E+00 8.4E-03	2.2E-01 8.7E-03	8.7E-01 3.0E-03	3.6E-02
22:10----22:40	1.5E+00 8.4E-03	2.0E-01 8.6E-03	8.7E-01 9.7E-03	3.6E-02
22:20----22:50	1.4E+00 8.1E-03	1.9E-01 8.3E-03	8.7E-01 7.2E-03	3.5E-02
22:30----23:00	1.4E+00 7.3E-03	1.8E-01 8.5E-03	8.6E-01 1.6E-02	3.5E-02
22:40----23:10	1.5E+00 7.0E-03	2.0E-01 8.5E-03	8.6E-01 1.9E-02	3.5E-02
22:50----23:20	1.5E+00 7.3E-03	2.1E-01 8.5E-03	8.5E-01 1.9E-02	3.5E-02
23:00----23:30	1.5E+00 7.6E-03	2.1E-01 8.1E-03	8.5E-01 1.4E-02	3.4E-02
23:10----23:40	1.4E+00 7.3E-03	1.9E-01 8.0E-03	8.5E-01 8.9E-03	3.3E-02

MARATHON II #2, CONT'D

TIME	THC NO2	THC-CH4 NO	CH4 OZONE	NOX
23:20-----23:50	1.4E+00 6.9E-03	1.9E-01 7.8E-03	8.5E-01 8.6E-03	3.2E-02
23:30-----00:00	1.4E+00 6.7E-03	1.8E-01 7.7E-03	8.3E-01 7.6E-03	3.2E-02
23:40-----00:10	1.4E+00 6.3E-03	1.8E-01 7.6E-03	8.2E-01 5.5E-03	3.1E-02
23:50-----00:20	1.4E+00 6.4E-03	1.7E-01 7.6E-03	8.1E-01 7.3E-03	3.1E-02
00:00-----00:30	1.4E+00 6.7E-03	1.8E-01 7.6E-03	8.1E-01 7.5E-03	3.1E-02
00:10-----00:40	1.4E+00 6.7E-03	2.1E-01 7.5E-03	8.1E-01 9.7E-03	3.1E-02
00:20-----00:50	1.4E+00 6.2E-03	2.2E-01 7.4E-03	8.0E-01 1.8E-02	3.0E-02
00:30-----01:00	1.4E+00 5.9E-03	2.2E-01 7.4E-03	8.0E-01 1.6E-02	3.0E-02
00:40-----01:10	1.4E+00 5.9E-03	2.0E-01 7.4E-03	8.0E-01 1.4E-02	3.0E-02
00:50-----01:20	1.4E+00 5.6E-03	2.0E-01 7.4E-03	8.0E-01 9.9E-03	3.0E-02
01:00-----01:30	1.4E+00 5.4E-03	1.9E-01 7.3E-03	8.0E-01 1.4E-02	3.0E-02
01:10-----01:40	1.4E+00 5.1E-03	1.8E-01 7.3E-03	8.0E-01 1.2E-02	2.9E-02
01:20-----01:50	1.4E+00 5.0E-03	1.7E-01 7.1E-03	8.0E-01 6.7E-03	2.8E-02
01:30-----02:00	1.4E+00 4.7E-03	1.8E-01 7.0E-03	7.9E-01 1.6E-02	2.8E-02
01:40-----02:10	1.4E+00 4.4E-03	1.8E-01 7.1E-03	7.9E-01 1.5E-02	2.8E-02
01:50-----02:20	1.4E+00 4.4E-03	1.8E-01 7.1E-03	7.8E-01 2.4E-02	2.8E-02
02:00-----02:30	1.4E+00 4.0E-03	1.9E-01 7.0E-03	7.7E-01 1.0E-02	2.7E-02
02:10-----02:40	1.4E+00 3.9E-03	1.9E-01 6.8E-03	7.6E-01 9.3E-03	2.7E-02
02:20-----02:50	1.4E+00 3.6E-03	1.9E-01 6.7E-03	7.5E-01 1.1E-02	2.6E-02

TIME	THC NO2	THC-CH4 NO	CH4 OZONE	NOX
02:30-----03:00	1.4E+00 3.8E-03	1.9E-01 6.6E-03	7.4E-01 2.0E-02	2.6E-02
02:40-----03:10	1.4E+00 4.0E-03	1.9E-01 6.5E-03	7.3E-01 2.0E-02	2.6E-02
02:50-----03:20	1.4E+00 4.5E-03	1.9E-01 6.4E-03	7.2E-01 1.7E-02	2.5E-02
03:00-----03:30	1.4E+00 4.8E-03	1.9E-01 6.3E-03	7.1E-01 8.0E-03	2.5E-02
03:10-----03:40	1.4E+00 5.0E-03	2.0E-01 6.3E-03	7.1E-01 8.8E-03	2.5E-02
03:20-----03:50	1.4E+00 5.0E-03	1.9E-01 6.3E-03	7.0E-01 1.2E-03	2.5E-02
03:30-----04:00	1.3E+00 5.1E-03	1.8E-01 6.3E-03	7.1E-01 2.4E-03	2.5E-02
03:40-----04:10	1.3E+00 5.1E-03	1.9E-01 6.2E-03	7.0E-01 1.5E-03	2.5E-02
03:50-----04:20	1.3E+00 5.3E-03	1.9E-01 6.2E-03	6.9E-01 1.3E-03	2.5E-02
04:00-----04:30	1.4E+00 4.9E-03	2.0E-01 6.2E-03	6.7E-01 4.7E-03	2.5E-02
04:10-----04:40	1.4E+00 4.7E-03	2.0E-01 6.2E-03	6.8E-01 5.9E-03	2.5E-02
04:20-----04:50	1.4E+00 4.5E-03	2.0E-01 6.1E-03	6.7E-01 7.1E-03	2.4E-02
04:30-----05:00	1.3E+00 4.3E-03	2.0E-01 6.1E-03	6.7E-01 2.4E-03	2.4E-02
04:40-----05:10	1.4E+00 4.3E-03	2.0E-01 6.0E-03	6.7E-01 3.5E-03	2.4E-02
04:50-----05:20	1.4E+00 4.2E-03	2.0E-01 6.0E-03	6.7E-01 3.1E-03	2.4E-02
05:00-----05:30	1.4E+00 4.5E-03	2.9E-01 6.0E-03	6.7E-01 4.4E-03	2.4E-02
05:10-----05:40	1.4E+00 4.6E-03	1.9E-01 6.0E-03	6.8E-01 3.7E-03	2.4E-02
05:20-----05:50	1.4E+00 4.3E-03	1.9E-01 6.0E-03	6.7E-01 4.8E-03	2.4E-02
05:30-----06:00	1.3E+00 4.1E-03	1.9E-01 6.0E-03	6.7E-01 4.8E-03	2.4E-02

MARATHON II #2, CONT'D

TIME	THC NO2	THC-CH4 NO	CH4 OZONE	NOX
05:40-----06:10	1.3E+00 4.2E-03	1.9E-01 6.0E-03	6.7E-01 3.4E-03	2.4E-02
05:50-----06:20	1.4E+00 7.0E-03	2.0E-01 6.0E-03	6.7E-01 2.3E-03	2.6E-02
06:00-----06:30	1.4E+00 1.1E-02	2.0E-01 6.5E-03	6.8E-01 1.1E-03	3.1E-02
06:10-----06:40	1.4E+00 1.1E-02	2.1E-01 6.5E-03	6.8E-01 1.5E-03	3.0E-02
06:20-----06:50	1.4E+00 8.8E-03	2.2E-01 6.4E-03	6.9E-01 5.6E-04	2.9E-02
06:30-----07:00	1.4E+00 4.8E-03	2.2E-01 5.8E-03	6.8E-01 4.3E-03	2.4E-02
06:40-----07:10	1.4E+00 5.0E-03	2.2E-01 5.8E-03	6.7E-01 4.0E-03	2.4E-02
06:50-----07:20	1.4E+00 4.8E-03	2.1E-01 5.8E-03	6.6E-01 4.5E-03	2.4E-02

STATISTICS

NUMBER OF READINGS 83

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
THC	1.32E+00	6.44E+00	1.56E+00	6.67E-01	1.50E+00	1.26E+00
THC-CH4	1.68E-01	2.49E+00	2.64E-01	3.04E-01	2.24E-01	1.52E+00
CH4	6.47E-01	1.18E+00	8.37E-01	1.44E-01	8.26E-01	1.18E+00
NOX	2.34E-02	9.71E-02	3.57E-02	1.45E-02	3.36E-02	1.39E+00
NO2	3.49E-03	3.99E-02	8.80E-03	6.51E-03	7.38E-03	1.74E+00
NO	5.68E-03	2.00E-02	8.47E-03	2.89E-03	8.09E-03	1.34E+00
OZONE	1.00E-06	4.08E-02	9.16E-03	1.12E-02	6.81E-04	5.87E+01

MARATHON II #3

DATE: OCT 4 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: HWY #17 & GULF STN. (54700-54010); 5.5KM & 35DGS/SOURCE

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
12:17----12:47	7.6E-01 5.8E-01 3.6E-02 16 220	2.8E-02 1.2E+00 5.0E-02 61	1.7E+00 7.4E-02 2.6E-02 981	1.9E-02 4.4E-03 4.4E-02 6
12:32----13:02	7.9E-01 5.7E-01 3.9E-02 17 229	3.1E-02 1.2E+00 6.6E-02 57	1.7E+00 8.6E-02 2.7E-02 981	2.2E-02 5.3E-03 5.6E-02 7
12:47----13:17	6.0E-01 5.7E-01 3.0E-02 17 232	4.2E-02 1.2E+00 7.8E-02 56	1.7E+00 7.8E-02 2.4E-02 981	3.5E-02 5.8E-03 5.8E-02 8
13:02----13:32	5.1E-01 5.6E-01 2.9E-02 17 231	5.7E-02 1.3E+00 2.7E-01 55	1.7E+00 7.3E-02 2.2E-02 981	5.1E-02 5.2E-03 5.8E-02 7
13:17----13:47	6.3E-01 2.8E-01 1.7E-02 17 227	7.9E-02 6.9E-01 2.6E-01 56	9.2E-01 3.8E-02 2.1E-02 981	6.6E-02 2.4E-03 5.7E-02 8
13:32----14:02	7.5E-01 7.0E-03 2.9E-03 16 227	1.0E-01 5.3E-02 6.9E-02 58	5.6E-02 4.5E-03 1.9E-02 981	8.1E-02 1.8E-05 5.5E-02 10
13:47----14:17	6.7E-01 2.1E-06 2.4E-03 16 227	1.0E-01 1.3E-05 6.4E-02 60	8.3E-06 4.1E-03 2.1E-02 981	7.8E-02 2.4E-05 5.3E-02 9
14:02----14:32	5.0E-01 2.8E-01 1.9E-02 16 232	9.8E-02 6.0E-01 5.8E-02 61	8.4E-01 4.0E-02 2.3E-02 980	7.0E-02 2.1E-03 4.9E-02 9

MARATHON II #3, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
14:17-----14:47	5.9E-01 6.4E-01 2.9E-02 15 239	9.3E-02 1.3E+00 5.3E-02 61	1.8E+00 6.4E-02 2.3E-02 980	6.4E-02 4.0E-03 4.1E-02 10
14:32-----15:02	7.6E-01 6.6E-01 2.5E-02 15 232	7.6E-02 1.3E+00 4.7E-02 64	1.8E+00 5.3E-02 2.7E-02 980	4.2E-02 3.2E-03 3.2E-02 12
14:47-----15:17	6.7E-01 6.0E-01 3.5E-02 14 221	5.6E-02 1.3E+00 4.2E-02 69	1.8E+00 6.6E-02 3.1E-02 980	2.0E-02 2.8E-03 2.8E-02 12
15:02-----15:32	4.9E-01 6.0E-01 3.7E-02 13 220	5.2E-02 1.2E+00 4.0E-02 71	1.8E+00 7.0E-02 3.0E-02 980	1.8E-02 3.1E-03 3.3E-02 12
15:17-----15:47	5.2E-01 5.7E-01 2.8E-02 13 222	5.2E-02 1.2E+00 3.6E-02 72	1.7E+00 5.8E-02 2.9E-02 980	2.1E-02 2.9E-03 3.0E-02 12
15:32-----16:02	6.1E-01 3.0E-01 1.9E-02 12 219	4.8E-02 7.0E-01 3.3E-02 74	9.7E-01 4.5E-02 3.1E-02 980	1.5E-02 2.8E-03 2.2E-02 10
15:47-----16:17	6.0E-01 3.5E-02 2.3E-02 12 222	4.6E-02 1.3E-01 3.4E-02 75	1.5E-01 4.9E-02 3.1E-02 980	1.1E-02 3.0E-03 1.3E-02 8
16:02-----16:32	5.0E-01 3.2E-06 3.8E-02 12 220	5.1E-02 2.5E-05 3.3E-02 76	2.4E-05 7.2E-02 2.8E-02 980	1.5E-02 3.3E-03 1.4E-02 8
16:17-----16:47	5.8E-01 3.2E-06 4.0E-02 12 223	5.4E-02 2.5E-05 3.2E-02 78	2.4E-05 8.0E-02 2.8E-02 980	1.9E-02 3.8E-03 1.1E-02 8

MARATHON II #3, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
16:32----17:02	7.1E-01 3.2E-06 3.2E-02 12 231	5.3E-02 2.5E-05 3.1E-02 77	2.4E-05 7.2E-02 2.7E-02 980	1.9E-02 4.1E-03 9.6E-03 6
16:47----17:17	6.2E-01 3.2E-06 5.8E-02 12 218	5.4E-02 2.5E-05 3.0E-02 77	2.4E-05 1.1E-01 2.7E-02 979	2.1E-02 4.9E-03 8.5E-03 5
17:02----17:32	5.6E-01 3.2E-06 8.8E-02 12 214	4.6E-02 2.5E-05 3.0E-02 79	2.4E-05 1.5E-01 2.9E-02 979	1.7E-02 4.8E-03 1.0E-02 6
17:17----17:47	5.2E-01 3.2E-06 5.0E-02 12 219	4.3E-02 2.5E-05 3.2E-02 78	2.4E-05 8.0E-02 2.9E-02 979	1.8E-02 2.0E-03 1.2E-02 6
17:32----18:02	4.0E-01 3.2E-06 2.5E-02 12 216	4.6E-02 2.5E-05 3.3E-02 77	2.4E-05 3.3E-02 2.8E-02 979	2.2E-02 8.6E-04 1.0E-02 6
17:47----18:17	1.9E-01 3.2E-06 3.2E-02 12 210	4.2E-02 2.5E-05 1.9E-01 76	2.4E-05 5.1E-02 3.2E-02 979	1.5E-02 5.1E-03 7.8E-03 7
18:02----18:32	1.6E-01 3.2E-06 3.3E-02 11 212	4.0E-02 2.5E-05 1.9E-01 75	2.4E-05 5.5E-02 3.3E-02 979	8.3E-03 5.6E-03 6.0E-03 6
18:17----18:47	3.6E-01 3.2E-06 3.7E-02 11 214	3.9E-02 2.5E-05 3.1E-02 75	2.4E-05 6.0E-02 3.3E-02 979	5.0E-03 5.9E-03 4.5E-03 5
18:32----19:02	4.7E-01 3.2E-06 5.6E-02 11 212	3.7E-02 2.5E-05 3.1E-02 76	2.4E-05 9.2E-02 3.2E-02 979	2.9E-03 6.3E-03 2.7E-03 4

MARATHON II #3, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
18:47-----19:17	4.2E-01 3.2E-06 9.1E-02 11 209	3.5E-02 2.5E-05 3.2E-02 78	2.4E-05 1.4E-01 3.1E-02 979	1.7E-03 3.6E-03 8.5E-04 4
19:02-----19:32	2.7E-01 3.2E-06 1.0E-01 11 211	3.1E-02 2.5E-05 2.8E-02 79	2.4E-05 1.6E-01 3.2E-02 979	1.1E-03 3.9E-03 2.5E-04 4
19:17-----19:47	2.9E-01 3.2E-06 9.3E-02 11 216	2.7E-02 2.5E-05 2.5E-02 79	2.4E-05 1.5E-01 3.3E-02 978	9.2E-04 4.2E-03 4.2E-05 4
19:32-----20:02	7.6E-01 3.2E-06 1.1E-01 11 216	2.3E-02 2.5E-05 2.7E-02 79	2.4E-05 1.8E-01 3.2E-02 978	1.1E-03 4.8E-03 2.2E-06 3
19:47-----20:17	6.4E-01 3.2E-06 1.5E-01 11 219	2.0E-02 2.5E-05 3.9E-01 78	2.4E-05 2.3E-01 3.2E-02 978	1.2E-03 5.3E-03 1.5E-06 3
20:02-----20:32	1.5E+00 3.2E-06 2.0E-01 11 221	2.3E-02 2.5E-05 3.9E-01 78	2.4E-05 3.4E-01 3.2E-02 978	1.3E-03 1.3E-02 1.5E-06 1
20:17-----20:47	2.5E+00 3.0E-01 2.2E-01 11 204	3.4E-02 1.9E-01 2.6E-02 79	2.5E-01 3.9E-01 3.0E-02 978	1.3E-03 1.6E-02 1.5E-06 !
20:32-----21:02	2.1E+00 4.8E-01 1.1E-01 11 214	3.8E-02 6.0E-01 1.9E-02 80	8.2E-01 2.1E-01 3.1E-02 978	1.1E-03 1.5E-02 1.5E-06 2

STATISTICS

NUMBER OF READINGS 532

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	2.68E+01	6.97E-01	1.65E+00	1.71E-01	4.21E+01
H2S	1.00E-06	1.26E-01	4.92E-02	2.38E-02	4.20E-02	2.51E+00
THC	1.00E-06	1.99E+00	6.19E-01	8.27E-01	1.99E-04	1.00E+03
SO2	7.48E-04	1.13E-01	2.23E-02	2.50E-02	1.00E-02	4.34E+00
THC-CH4	1.00E-06	6.64E+00	2.19E-01	4.01E-01	1.30E-04	5.90E+02
CH4	1.00E-06	1.35E+00	4.41E-01	5.84E-01	1.88E-04	8.61E+02
NOX	6.91E-04	8.55E-01	1.01E-01	1.02E-01	5.15E-02	4.47E+00
NO2	1.00E-06	1.59E-01	4.84E-03	1.33E-02	7.50E-04	2.73E+01
NO	1.00E-06	4.63E-01	5.62E-02	6.04E-02	2.52E-02	5.67E+00
HG	1.00E-06	7.00E+00	7.94E-02	4.61E-01	3.72E-02	2.16E+00
OZONE	9.10E-03	3.63E-02	2.84E-02	5.06E-03	2.79E-02	1.22E+00
SOLAR RAD	1.00E-06	6.37E-02	2.11E-02	2.11E-02	2.42E-03	5.05E+01
TEMP	10	18	13	2		
HUMIDITY	51	81	71	9	71	1
BAROMETER	978	981	979	1	979	1
WIND SPEED	0	20	7	4	4	12

MARATHON II #4

DATE: OCT 4 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: MARATHON WATER TOWER (54550-53962): 0.9KM & 090DGS/SOURCE

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
21:38----22:08	6.4E-01 6.3E-01 7.6E-02 11 177	2.6E-02 1.3E+00 1.7E-02 78	1.8E+00 1.4E-01 4.0E-02 986	1.0E-04 4.7E-03 1.0E-06 7
21:53----22:23	4.4E-01 6.3E-01 5.0E-02 11 193	2.3E-02 1.3E+00 2.0E-02 80	1.8E+00 9.8E-02 4.0E-02 986	1.1E-04 4.4E-03 1.0E-06 8
22:08----22:38	3.8E-01 6.3E-01 2.6E-02 11 195	2.6E-02 1.3E+00 2.3E-02 82	1.8E+00 6.5E-02 4.0E-02 986	2.1E-04 4.2E-03 1.0E-06 9
22:23----22:53	5.3E-01 6.3E-01 1.6E-02 11 182	2.7E-02 1.3E+00 2.5E-02 81	1.8E+00 5.0E-02 4.0E-02 986	3.8E-04 4.2E-03 1.0E-06 9
22:38----23:08	5.4E-01 6.3E-01 1.8E-02 11 179	2.8E-02 1.3E+00 2.7E-02 80	1.8E+00 5.2E-02 4.0E-02 986	6.4E-04 4.3E-03 1.0E-06 6
22:53----23:23	3.2E-01 6.1E-01 1.8E-02 11 204	3.1E-02 1.2E+00 2.7E-02 77	1.8E+00 5.1E-02 4.3E-02 986	1.2E-03 4.1E-03 3.5E-06 7
23:08----23:38	2.5E-01 5.4E-01 9.7E-03 11 216	3.5E-02 1.1E+00 2.7E-02 75	1.6E+00 3.5E-02 4.5E-02 986	1.6E-03 3.2E-03 3.5E-06 10
23:23----23:53	4.2E-01 2.5E-01 3.2E-03 11 220	3.5E-02 5.5E-01 2.8E-02 78	?.7E-01 1.3E-02 4.4E-02 986	1.6E-03 1.3E-03 1.0E-06 9

MARATHON II #4, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
23:38----00:08	3.5E-01 2.5E-03 9.4E-04 11 226	3.5E-02 2.3E-02 2.8E-02 80	2.1E-02 2.4E-03 4.5E-02 986	1.5E-03 1.5E-05 1.0E-06 9
23:53----00:23	1.8E-01 3.3E-06 9.1E-04 11 228	3.3E-02 1.8E-05 2.8E-02 79	1.7E-05 2.4E-03 4.7E-02 986	1.9E-03 3.6E-05 1.0E-06 9
00:08----00:38	2.5E-01 3.3E-06 9.6E-04 11 252	3.2E-02 1.8E-05 2.8E-02 78	1.7E-05 2.3E-03 4.9E-02 986	2.3E-03 3.1E-05 1.0E-06 7
00:23----00:53	3.3E-01 3.3E-06 8.5E-04 11 265	3.3E-02 1.8E-05 2.8E-02 81	1.7E-05 2.2E-03 4.9E-02 986	1.9E-03 1.2E-05 1.0E-06 10
00:38----01:08	2.7E-01 3.3E-06 9.2E-04 11 260	3.3E-02 1.8E-05 2.8E-02 83	1.7E-05 2.1E-03 4.9E-02 985	9.7E-04 6.8E-06 1.0E-06 8
00:53----01:23	3.0E-01 3.3E-06 1.3E-03 11 233	3.4E-02 1.8E-05 2.9E-02 85	1.7E-05 2.0E-03 4.8E-02 985	4.4E-04 1.1E-05 1.0E-06 8
01:08----01:38	4.2E-01 3.3E-06 1.1E-03 10 204	3.5E-02 1.8E-05 2.9E-02 86	1.7E-05 2.0E-03 4.8E-02 985	2.7E-04 2.0E-05 1.0E-06 10
01:23----01:53	4.4E-01 3.3E-06 8.5E-04 10 205	3.7E-02 1.8E-05 2.7E-02 88	1.7E-05 2.1E-03 4.8E-02 985	2.3E-04 2.1E-05 1.0E-06 10
01:38----02:08	3.1E-01 3.3E-06 8.8E-04 10 213	3.9E-02 1.8E-05 2.6E-02 92	1.7E-05 2.3E-03 4.8E-02 985	2.7E-04 2.9E-05 1.0E-06 12

MARATHON II #4, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
01:53----02:23	1.5E-01 3.3E-06 8.2E-04 10 205	3.9E-02 1.8E-05 2.6E-02 96	1.7E-05 2.1E-03 4.8E-02 984	3.2E-04 1.9E-05 1.0E-06 12
02:08----02:38	2.6E-01 3.3E-06 8.4E-04 10 195	3.9E-02 1.8E-05 2.6E-02 99	1.7E-05 1.9E-03 4.7E-02 984	3.6E-04 4.5E-06 1.0E-06 9
02:23----02:53	3.8E-01 3.3E-06 8.4E-04 10 194	3.9E-02 1.8E-05 2.5E-02 101	1.7E-05 2.2E-03 4.6E-02 984	3.9E-04 1.1E-05 1.0E-06 9
02:38----03:08	2.1E-01 3.3E-06 6.4E-04 10 201	3.9E-02 1.8E-05 2.4E-02 102	1.7E-05 1.9E-03 4.6E-02 984	4.4E-04 8.1E-06 1.0E-06 11
02:53----03:23	2.5E-02 3.3E-06 3.7E-04 10 203	3.9E-02 1.8E-05 2.2E-02 103	1.7E-05 1.6E-03 4.6E-02 984	5.9E-04 2.1E-05 1.0E-06 11
03:08----03:38	2.7E-02 3.3E-06 4.2E-04 10 214	4.0E-02 1.8E-05 2.1E-02 104	1.7E-05 1.7E-03 4.6E-02 983	7.7E-04 3.8E-05 1.0E-06 13
03:23----03:53	5.5E-02 3.3E-06 5.2E-04 10 214	3.8E-02 1.8E-05 2.0E-02 105	1.7E-05 1.8E-03 4.6E-02 983	8.8E-04 5.2E-05 1.0E-06 12
03:38----04:08	2.9E-02 3.3E-06 6.9E-04 10 219	3.6E-02 1.8E-05 2.0E-02 106	1.7E-05 1.8E-03 4.5E-02 983	9.5E-04 3.7E-05 1.0E-06 9
03:53----04:23	1.3E-03 3.3E-06 8.9E-04 10 250	3.7E-02 1.8E-05 2.0E-02 106	1.7E-05 1.5E-03 4.4E-02 983	7.3E-04 1.9E-05 1.0E-06 11

MARATHON II #4, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
04:08----04:38	5.6E-03 3.3E-06 5.9E-04 10 259	3.7E-02 1.8E-05 1.9E-02 107	1.7E-05 1.5E-03 4.4E-02 982	2.5E-04 4.7E-05 1.0E-06 14
04:23----04:53	3.0E-02 3.3E-06 4.8E-04 10 261	3.7E-02 1.8E-05 1.8E-02 108	1.7E-05 1.6E-03 4.4E-02 982	4.8E-06 4.0E-05 1.0E-06 13
04:38----05:08	2.6E-02 3.3E-06 4.4E-04 10 265	3.6E-02 1.8E-05 1.7E-02 108	1.7E-05 1.5E-03 4.3E-02 982	1.0E-06 3.5E-05 1.0E-06 15
04:53----05:23	9.1E-04 3.3E-06 4.3E-04 10 271	3.5E-02 1.8E-05 1.7E-02 108	1.7E-05 1.3E-03 4.2E-02 982	1.0E-06 3.3E-05 1.0E-06 16
05:08----05:38	3.9E-03 3.3E-06 4.9E-04 11 273	3.4E-02 1.8E-05 1.6E-02 108	1.7E-05 1.4E-03 4.1E-02 982	1.0E-06 1.3E-05 1.0E-06 15
05:23----05:53	1.4E-02 3.3E-06 3.8E-04 11 275	3.7E-02 1.8E-05 1.8E-02 108	1.7E-05 1.3E-03 3.8E-02 982	7.0E-04 4.0E-05 1.0E-06 15
05:38----06:08	9.9E-03 3.3E-06 4.0E-04 11 287	3.9E-02 1.8E-05 2.2E-02 107	1.7E-05 1.3E-03 3.3E-02 982	3.5E-03 4.5E-05 1.0E-06 12
05:53----06:23	6.2E-06 3.3E-06 5.7E-04 11 301	3.5E-02 1.8E-05 2.6E-02 105	1.7E-05 1.2E-03 3.0E-02 982	4.0E-03 1.4E-05 1.0E-06 9
06:08----06:38	4.2E-02 3.3E-06 4.3E-04 11 301	3.5E-02 1.8E-05 3.4E-02 103	1.7E-05 1.3E-03 2.7E-02 982	6.1E-03 1.5E-05 1.0E-06 8

MARATHON II #4, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
06:23----06:53	1.3E-01 3.3E-06 3.9E-04 11 313	3.7E-02 1.8E-05 3.1E-02 101	1.7E-05 1.6E-03 2.6E-02 982	7.8E-03 2.6E-05 1.0E-06 11
06:38----07:08	2.6E-01 3.3E-06 5.8E-04 11 321	3.7E-02 1.8E-05 2.2E-02 99	1.7E-05 1.6E-03 2.7E-02 982	4.5E-03 2.0E-05 1.0E-06 14
06:53----07:23	1.9E-01 3.3E-06 4.7E-04 11 324	3.7E-02 1.8E-05 2.2E-02 94	1.7E-05 1.6E-03 2.6E-02 982	2.8E-03 4.1E-05 1.0E-06 13
07:08----07:38	1.4E-01 3.3E-06 4.3E-04 11 327	3.7E-02 1.8E-05 2.2E-02 89	1.7E-05 1.8E-03 2.7E-02 982	2.4E-03 3.6E-05 2.0E-06 12
07:23----07:53	3.0E-01 3.3E-06 4.8E-04 11 330	3.7E-02 1.8E-05 2.2E-02 87	1.7E-05 1.6E-03 2.6E-02 982	2.0E-03 1.6E-05 3.8E-05 12
07:38----08:08	3.1E-01 3.3E-06 4.8E-04 11 332	3.7E-02 1.8E-05 2.2E-02 86	1.7E-05 1.4E-03 2.6E-02 982	1.1E-03 2.6E-05 1.5E-04 12
07:53----08:23	1.7E-01 3.3E-06 4.8E-04 11 331	3.7E-02 1.8E-05 2.2E-02 85	1.7E-05 1.6E-03 2.5E-02 982	2.8E-04 3.2E-05 5.5E-04 12
08:08----08:38	1.4E-01 3.3E-06 5.9E-04 11 328	3.5E-02 1.8E-05 2.3E-02 84	1.7E-05 1.7E-03 2.5E-02 982	2.7E-05 2.9E-05 1.5E-03 11
08:23----08:53	1.6E-01 3.3E-06 5.6E-04 11 331	3.5E-02 1.8E-05 2.2E-02 83	1.7E-05 1.6E-03 2.5E-02 982	1.0E-06 1.4E-05 3.7E-03 9

MARATHON II #4, CONT'D

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
08:38----09:08	5.5E-02 3.3E-06 3.4E-04 11 327	3.5E-02 1.8E-05 2.3E-02 81	1.7E-05 1.5E-03 2.4E-02 982	2.2E-05 1.7E-05 8.4E-03 11
08:53----09:23	8.4E-03 3.3E-06 4.7E-04 11 326	3.4E-02 1.8E-05 2.4E-02 78	1.7E-05 1.5E-03 2.3E-02 983	7.6E-05 2.4E-05 9.9E-03 17
09:08----09:38	8.1E-02 3.3E-06 8.0E-04 10 327	3.5E-02 1.8E-05 2.5E-02 73	1.7E-05 1.4E-03 2.4E-02 983	2.2E-04 2.7E-05 7.4E-03 18
09:23----09:53	1.3E-01 3.3E-06 7.8E-04 10 329	3.8E-02 1.8E-05 2.4E-02 70	1.7E-05 1.6E-03 2.5E-02 983	4.0E-04 2.3E-05 1.6E-02 20
09:38----10:08	5.7E-02 3.3E-06 6.6E-04 10 331	3.7E-02 1.8E-05 2.3E-02 67	1.7E-05 1.6E-03 2.5E-02 983	5.8E-04 7.9E-06 3.0E-02 19
09:53----10:23	6.4E-03 3.3E-06 6.6E-04 11 329	3.6E-02 1.8E-05 2.3E-02 63	1.7E-05 1.4E-03 2.5E-02 983	7.1E-04 1.0E-06 3.7E-02 17

STATISTICS

NUMBER OF READINGS 770

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	4.24E+00	1.98E-01	2.99E-01	1.34E-03	4.58E+02
H2S	1.89E-02	5.79E-02	3.51E-02	4.71E-03	3.48E-02	1.16E+00
THC	1.00E-06	1.88E+00	2.77E-01	6.47E-01	9.72E-06	1.90E+02
SO2	1.00E-06	2.71E-02	1.15E-03	2.02E-03	2.30E-04	1.49E+01
THC-CH4	1.00E-06	7.81E-01	9.48E-02	2.23E-01	8.07E-06	1.26E+02
CH4	1.00E-06	1.26E+00	1.92E-01	4.46E-01	9.31E-06	1.68E+02
NOX	1.00E-06	2.07E-01	1.26E-02	3.07E-02	2.33E-03	5.95E+00
NO2	1.00E-06	9.41E-03	6.60E-04	1.57E-03	6.73E-06	2.29E+01
NO	1.00E-06	1.27E-01	5.60E-03	1.64E-02	2.56E-04	2.86E+01
HG	8.13E-03	5.10E-02	2.36E-02	5.03E-03	2.31E-02	1.24E+00
OZONE	9.21E-03	5.09E-02	3.77E-02	9.63E-03	3.64E-02	1.33E+00
SOLAR RAD	1.00E-06	4.21E-02	2.88E-03	8.75E-03	6.42E-06	3.49E+01
TEMP	9	12	11	1		
HUMIDITY	59	108	90	13	89	1
BAROMETER	981	986	984	2	984	1
WIND SPEED	0	31	13	6	11	2

MARATHON II #5

DATE: OCT 5 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: MAIN ST. S. (54560-53993); 1.5KM & 135DGS/SOURCE

TIME	CO THC-CH4 NO TEMP WIND DIRECTION	H2S CH4 HG HUMIDITY	THC NOX OZONE BAROMETER	SO2 NO2 SOLAR RAD WIND SPEED
11:13----11:43	1.0E+00 9.4E-01 5.3E-02 13 283	6.7E-02 1.3E+00 1.0E-01 53	1.9E+00 4.3E-02 1.5E-02 984	2.4E-02 6.6E-03 4.4E-02 5
11:28----11:58	1.7E+00 1.2E+00 1.2E-01 14 296	6.2E-02 1.3E+00 1.0E-01 49	2.0E+00 1.3E-01 1.3E-02 984	4.2E-02 2.6E-02 5.0E-02 4
11:43----12:13	1.3E+00 1.0E+00 1.9E-01 13 318	7.0E-02 1.3E+00 9.2E-02 50	2.0E+00 2.3E-01 1.5E-02 984	3.4E-02 4.2E-02 4.2E-02 5
11:58----12:28	2.3E+00 9.0E-01 3.0E-01 13 329	5.1E-02 1.2E+00 9.0E-02 51	2.1E+00 3.4E-01 1.6E-02 983	1.7E-02 5.3E-02 4.5E-02 4
12:13----12:43	2.6E+00 8.5E-01 4.3E-01 14 346	2.5E-02 1.2E+00 8.9E-02 51	2.1E+00 4.8E-01 1.6E-02 983	5.5E-03 7.3E-02 5.2E-02 3
12:28----12:58	3.7E-01 7.1E-01 4.1E-01 14 346	1.7E-02 1.2E+00 8.8E-02 49	1.9E+00 4.5E-01 1.6E-02 983	3.7E-03 6.8E-02 5.1E-02 3
12:43----13:13	2.9E-01 7.1E-01 3.0E-01 14 341	9.0E-03 1.2E+00 9.0E-02 47	1.9E+00 3.3E-01 1.7E-02 983	2.8E-03 4.0E-02 5.3E-02 2
12:58----13:28	2.2E-01 7.6E-01 2.2E-01 15 13	1.6E-03 1.2E+00 9.5E-02 45	1.9E+00 2.4E-01 1.8E-02 983	2.4E-03 2.5E-02 5.4E-02 2

MARATHON II #5, CONT'D

TIME	CO	H2S	THC	SO2
	THC-CH4	CH4	NOX	NO2
	NO	HG	OZONE	SOLAR RAD
	TEMP	HUMIDITY	BAROMETER	WIND SPEED
	WIND DIRECTION			
13:13-----13:43	2.2E-03	1.2E-06	2.1E+00	2.2E-03
	8.2E-01	1.2E+00	1.7E-01	2.2E-02
	1.6E-01	1.0E-01	1.8E-02	5.3E-02
	14	45	983	1
	344			

STATISTICS

NUMBER OF READINGS 153

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	5.25E+01	1.02E+00	4.84E+00	3.76E-05	4.82E+02
H2S	1.00E-06	1.65E-01	3.36E-02	3.71E-02	1.41E-03	1.35E+02
THC	1.47E+00	5.38E+00	1.99E+00	5.70E-01	1.93E+00	1.24E+00
SO2	1.74E-03	1.27E-01	1.37E-02	2.12E-02	6.36E-03	3.88E+00
THC-CH4	4.86E-01	6.36E+00	8.82E-01	7.34E-01	7.68E-01	1.55E+00
CH4	1.08E+00	2.23E+00	1.22E+00	1.29E-01	1.21E+00	1.09E+00
NOX	8.82E-03	6.46E-01	2.47E-01	1.73E-01	1.71E-01	2.84E+00
NO2	1.00E-06	2.98E-01	3.63E-02	5.27E-02	1.80E-03	1.02E+02
NO	4.58E-03	5.70E-01	2.26E-01	1.55E-01	1.54E-01	3.00E+00
HG	8.22E-02	2.90E-01	9.54E-02	1.80E-02	9.45E-02	1.13E+00
OZONE	5.93E-03	2.04E-02	1.60E-02	2.96E-03	1.57E-02	1.25E+00
SOLAR RAD	8.75E-03	6.07E-02	4.89E-02	1.22E-02	4.62E-02	1.48E+00
TEMP	12	15	14	1		
HUMIDITY	43	59	49	4	49	1
BAROMETER	983	984	983	0	983	1
WIND SPEED	0	19	5	4	2	12

MARATHON II #6

DATE: OCT 6 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: MILL CONSTRUCTION SITE (54475-53959); 0.3KM & 120DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
11:40----12:10	1.3E-01 5.0E-02	1.2E-01 3.0E-02	8.7E-02	3.1E-02
11:45----12:15	1.9E-01 8.1E-02	2.4E-01 3.2E-02	1.2E-01	4.3E-02
11:50----12:20	2.1E-01 9.1E-02	2.6E-01 3.3E-02	1.3E-01	3.9E-02
11:55----12:25	2.2E-01 9.3E-02	2.6E-01 3.1E-02	1.3E-01	3.7E-02
12:00----12:30	2.2E-01 9.1E-02	2.7E-01 2.9E-02	1.2E-01	3.1E-02
12:05----12:35	2.1E-01 8.2E-02	2.2E-01 2.6E-02	1.0E-01	2.4E-02
12:10----12:40	1.9E-01 7.2E-02	1.9E-01 2.3E-02	8.9E-02	1.9E-02
12:15----12:45	1.4E-01 3.8E-02	8.1E-02 1.9E-02	4.8E-02	6.6E-03
12:20----12:50	1.1E-01 2.4E-02	5.1E-02 1.7E-02	2.8E-02	3.0E-03
12:25----12:55	9.2E-02 1.9E-02	4.6E-02 1.6E-02	2.0E-02	5.8E-03

STATISTICS

NUMBER OF READINGS 78

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	2.23E-02	4.30E-01	1.39E-01	8.96E-02	1.12E-01	1.97E+00
SO2	5.84E-03	1.06E+00	1.25E-01	2.22E-01	4.27E-02	4.13E+00
NOX	1.00E-06	4.02E-01	7.09E-02	7.34E-02	3.26E-02	8.28E+00
NO2	1.00E-06	2.56E-01	2.13E-02	3.91E-02	1.27E-04	1.83E+02
NO	1.00E-06	3.12E-01	4.98E-02	5.58E-02	2.89E-02	4.51E+00
OZONE	4.84E-03	6.31E-02	2.45E-02	1.27E-02	2.13E-02	1.73E+00

MARATHON II #7

DATE: OCT 6 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: 21 YAWEY AVE. (54555-43953); 1.5KM & 130DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
14:06----14:36	4.0E-02 2.4E-02	1.8E-02 1.7E-02	3.2E-02	4.8E-03
14:07----14:37	4.1E-02 2.4E-02	1.8E-02 1.7E-02	3.2E-02	4.9E-03
14:08----14:38	4.2E-02 2.4E-02	1.8E-02 1.7E-02	3.2E-02	4.7E-03
14:09----14:39	4.2E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	4.9E-03
14:10----14:40	4.2E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	4.9E-03
14:11----14:41	4.2E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	4.9E-03
14:12----14:42	4.2E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	4.9E-03
14:13----14:43	4.1E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	4.9E-03
14:14----14:44	4.1E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	5.0E-03
14:15----14:45	4.1E-02 2.4E-02	1.8E-02 1.8E-02	3.2E-02	5.0E-03
14:16----14:46	4.1E-02 2.4E-02	1.8E-02 1.8E-02	3.2E-02	5.0E-03
14:17----14:47	4.1E-02 2.4E-02	1.8E-02 1.8E-02	3.2E-02	5.0E-03
14:18----14:48	4.0E-02 2.4E-02	1.7E-02 1.8E-02	3.2E-02	5.0E-03

STATISTICS

NUMBER OF READINGS 42

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	1.07E-02	5.95E-02	3.63E-02	1.64E-02	3.19E-02	1.72E+00
SO2	2.97E-03	1.52E-01	1.47E-02	2.48E-02	8.39E-03	2.50E+00
NOX	2.34E-02	6.59E-02	3.06E-02	7.86E-03	2.98E-02	1.23E+00
NO2	3.19E-04	3.10E-02	4.17E-03	5.17E-03	2.72E-03	2.48E+00
NO	1.95E-02	3.55E-02	2.33E-02	3.84E-03	2.31E-02	1.16E+00
OZONE	5.91E-03	2.71E-02	1.79E-02	4.66E-03	1.72E-02	1.35E+00

MARATHON II #8

DATE: OCT 6 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: 21 YAWEY AVE. (54555-43953); 1.5KM & 130DGS/SOURCE

TIME	SO2 OZONE	NOX	NO2	NO
16:00----16:30	3.1E-03 1.8E-02	3.8E-02	5.9E-03	2.9E-02
16:15----16:45	2.5E-03 1.3E-02	3.4E-02	5.8E-03	2.5E-02
16:30----17:00	1.9E-03 1.2E-02	2.8E-02	5.0E-03	2.2E-02
16:45----17:15	1.6E-03 1.4E-02	2.6E-02	4.0E-03	2.1E-02
17:00----17:30	1.5E-03 1.5E-02	2.2E-02	2.1E-03	1.8E-02
17:15----17:45	1.5E-03 1.3E-02	2.0E-02	1.6E-03	1.7E-02
17:30----18:00	1.5E-03 1.2E-02	1.9E-02	1.7E-03	1.5E-02
17:45----18:15	1.5E-03 1.3E-02	1.8E-02	1.7E-03	1.4E-02
18:00----18:30	1.5E-03 1.4E-02	1.7E-02	1.9E-03	1.4E-02
18:15----18:45	1.5E-03 1.7E-02	1.6E-02	1.0E-03	1.3E-02
18:30----19:00	1.5E-03 1.9E-02	1.5E-02	5.9E-04	1.3E-02
18:45----19:15	1.5E-03 1.9E-02	1.5E-02	1.0E-03	1.3E-02
19:00----19:30	1.5E-03 1.7E-02	1.6E-02	1.2E-03	1.4E-02
19:15----19:45	1.5E-03 1.9E-02	1.6E-02	6.6E-04	1.4E-02
19:30----20:00	1.5E-03 1.9E-02	2.1E-02	3.9E-03	1.6E-02
19:45----20:15	1.5E-03 1.6E-02	2.4E-02	6.1E-03	1.7E-02

MARATHON II #8, CONT'D

TIME	SO2 OZONE	NOX	NO2	NO
20:00----20:30	1.5E-03 1.8E-02	2.5E-02	4.8E-03	2.0E-02

STATISTICS

NUMBER OF READINGS 283

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
SO2	1.46E-03	4.44E-03	1.69E-03	5.36E-04	1.64E-03	1.37E+00
NOX	1.16E-02	6.74E-02	2.24E-02	9.49E-03	2.09E-02	1.44E+00
NO2	1.00E-06	4.15E-02	3.00E-03	5.48E-03	1.56E-04	4.49E+01
NO	1.13E-02	9.26E-02	1.79E-02	7.48E-03	1.69E-02	1.37E+00
OZONE	1.00E-06	1.10E-01	1.58E-02	1.35E-02	9.09E-03	5.70E+00

MARATHON II #9

DATE: OCT 12 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: MOUTH OF PIC RIVER (55150-53833); 14.5KM & 150DGS/SOURCE

TIME	H2S	SO2	OZONE
11:52----12:22	8.8E-03	4.1E-03	1.7E-02
11:57----12:27	8.5E-03	4.1E-03	1.7E-02
12:02----12:32	8.1E-03	4.1E-03	1.7E-02
12:07----12:37	7.7E-03	4.1E-03	1.7E-02
12:12----12:42	7.4E-03	4.1E-03	1.7E-02
12:17----12:47	7.2E-03	4.1E-03	1.7E-02
12:22----12:52	6.9E-03	4.1E-03	1.7E-02
12:27----12:57	6.7E-03	4.1E-03	1.7E-02
12:32----13:02	6.4E-03	4.1E-03	1.7E-02
12:37----13:07	6.1E-03	4.1E-03	1.8E-02
12:42----13:12	5.8E-03	4.1E-03	1.8E-02
12:47----13:17	5.5E-03	4.1E-03	1.9E-02
12:52----13:22	5.4E-03	4.1E-03	2.0E-02
12:57----13:27	5.1E-03	4.1E-03	2.1E-02
13:02----13:32	5.0E-03	4.1E-03	2.1E-02
13:07----13:37	4.9E-03	4.1E-03	2.1E-02
13:12----13:42	4.8E-03	4.1E-03	2.1E-02
13:17----13:47	4.6E-03	4.1E-03	2.2E-02
13:22----13:52	4.5E-03	4.1E-03	2.2E-02
13:27----13:57	4.5E-03	4.1E-03	2.2E-02
13:32----14:02	4.6E-03	4.1E-03	2.2E-02
13:37----14:07	4.5E-03	4.1E-03	2.2E-02
13:42----14:12	4.5E-03	4.1E-03	2.2E-02
13:47----14:17	4.6E-03	4.1E-03	2.2E-02
13:52----14:22	4.7E-03	4.1E-03	2.2E-02

STATISTICS

NUMBER OF READINGS 154

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	3.77E-03	1.07E-02	6.05E-03	1.81E-03	5.80E-03	1.33E+00
SO2	4.06E-03	4.09E-03	4.07E-03	4.94E-06	4.07E-03	1.00E+00
OZONE	1.13E-02	3.13E-02	1.94E-02	3.36E-03	1.91E-02	1.19E+00

MARATHON II #10

DATE: OCT 13 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION:
HWY #17, 1.5KM W. OF OPP STN (54585-54017); 5.5KM & 015DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
14:00----14:30	5.1E-02 2.2E-02	2.6E-02 1.8E-02	4.8E-02	1.0E-02
14:05----14:35	5.1E-02 2.2E-02	2.5E-02 1.9E-02	4.8E-02	1.0E-02
14:10----14:40	5.1E-02 2.2E-02	2.6E-02 2.0E-02	4.6E-02	8.6E-03
14:15----14:45	4.9E-02 2.2E-02	2.8E-02 2.1E-02	4.6E-02	8.4E-03
14:20----14:50	4.9E-02 2.2E-02	2.9E-02 2.1E-02	4.6E-02	9.1E-03
14:25----14:55	5.0E-02 2.2E-02	2.5E-02 2.0E-02	4.6E-02	9.1E-03
14:30----15:00	5.1E-02 2.3E-02	2.4E-02 2.1E-02	4.8E-02	1.1E-02

STATISTICS

NUMBER OF READINGS 63

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	3.74E-02	6.44E-02	5.04E-02	7.23E-03	4.99E-02	1.15E+00
SO2	1.55E-02	9.83E-02	2.53E-02	1.62E-02	2.29E-02	1.47E+00
NOX	4.19E-02	9.17E-02	4.80E-02	8.17E-03	4.75E-02	1.14E+00
NO2	1.00E-06	5.69E-02	1.04E-02	8.95E-03	6.78E-03	5.55E+00
NO	2.00E-02	5.86E-02	2.22E-02	4.95E-03	2.19E-02	1.16E+00
OZONE	6.44E-04	5.13E-02	2.00E-02	1.55E-02	1.12E-02	4.05E+00

MARATHON II #11

DATE: OCT 13 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: HWY #17, 3KM W. OF OPP STN. (54445-54025); 6KM & 000DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
15:55----16:25	3.9E-02 1.5E-02	4.4E-03 2.3E-02	4.4E-02	1.0E-02
15:56----16:26	3.9E-02 1.6E-02	4.6E-03 2.3E-02	4.4E-02	1.1E-02
15:57----16:27	3.9E-02 1.5E-02	4.7E-03 2.2E-02	4.4E-02	1.1E-02
15:58----16:28	4.0E-02 1.6E-02	4.9E-03 2.3E-02	4.4E-02	1.1E-02
15:59----16:29	4.0E-02 1.6E-02	5.1E-03 2.1E-02	4.4E-02	1.1E-02
16:00----16:30	4.0E-02 1.6E-02	5.3E-03 2.2E-02	4.5E-02	1.1E-02
16:01----16:31	4.0E-02 1.6E-02	5.5E-03 2.1E-02	4.5E-02	1.1E-02
16:02----16:32	4.0E-02 1.6E-02	5.7E-03 2.1E-02	4.5E-02	1.1E-02
16:03----16:33	4.0E-02 1.6E-02	5.9E-03 2.2E-02	4.5E-02	1.1E-02
16:04----16:34	4.0E-02 1.6E-02	6.1E-03 2.1E-02	4.5E-02	1.1E-02
16:05----16:35	4.0E-02 1.6E-02	6.2E-03 2.3E-02	4.5E-02	1.1E-02
16:06----16:36	4.0E-02 1.6E-02	6.4E-03 2.3E-02	4.5E-02	1.1E-02
16:07----16:37	4.0E-02 1.6E-02	6.6E-03 2.4E-02	4.5E-02	1.1E-02

MARATHON II #11 CONT'D

STATISTICS

NUMBER OF READINGS 42

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	3.06E-02	4.61E-02	3.94E-02	3.67E-03	3.93E-02	1.10E+00
SO2	2.96E-03	8.57E-03	5.57E-03	2.69E-03	4.93E-03	1.66E+00
NOX	3.98E-02	6.13E-02	4.40E-02	4.61E-03	4.38E-02	1.10E+00
NO2	6.17E-03	2.26E-02	1.06E-02	3.48E-03	1.02E-02	1.31E+00
NO	1.42E-02	2.01E-02	1.55E-02	1.16E-03	1.55E-02	1.07E+00
OZONE	6.43E-04	5.86E-02	2.33E-02	1.85E-02	1.26E-02	4.27E+00

MARATHON II #12

DATE: OCT 13 1977
SCAN TIME: 180 SEC
AVERAGING TIME: 30 MIN
LOCATION: HWY #17, 3KM W. OF OPP STN (54445-54025); 6KM @ 000DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
16:40----17:10	4.3E-02 1.6E-02	9.4E-03 2.4E-02	4.4E-02	9.4E-03
16:55----17:25	4.2E-02 1.5E-02	1.1E-02 2.3E-02	4.3E-02	1.1E-02
17:10----17:40	3.0E-02 1.5E-02	1.1E-02 2.4E-02	4.1E-02	9.1E-03
17:25----17:55	2.2E-02 1.5E-02	1.1E-02 2.3E-02	4.0E-02	8.9E-03
17:40----18:10	2.3E-02 1.4E-02	1.1E-02 2.1E-02	4.0E-02	8.6E-03
17:55----18:25	2.1E-02 1.4E-02	1.1E-02 2.2E-02	3.9E-02	8.3E-03
18:10----18:40	1.7E-02 1.4E-02	1.0E-02 2.8E-02	3.8E-02	8.5E-03
18:25----18:55	1.2E-02 1.3E-02	9.6E-03 3.3E-02	3.6E-02	5.9E-03
18:40----19:10	8.5E-03 1.3E-02	8.7E-03 3.2E-02	3.4E-02	5.5E-03
18:55----19:25	6.6E-03 1.2E-02	8.3E-03 3.2E-02	3.3E-02	6.3E-03
19:10----19:40	5.5E-03 1.2E-02	8.1E-03 3.5E-02	3.2E-02	6.5E-03
19:25----19:55	4.6E-03 1.2E-02	7.6E-03 2.9E-02	3.2E-02	6.3E-03
19:40----20:10	3.8E-03 1.2E-02	7.2E-03 2.6E-02	3.1E-02	5.9E-03
19:55----20:25	3.7E-03 1.1E-02	7.2E-03 2.9E-02	3.1E-02	6.0E-03
20:10----20:40	3.6E-03 1.1E-02	7.2E-03 3.1E-02	3.0E-02	5.5E-03
20:25----20:55	3.4E-03 1.2E-02	7.2E-03 3.0E-02	3.0E-02	6.0E-03

MARATHON II #12, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
20:40----21:10	4.5E-03 1.2E-02	7.2E-03 3.1E-02	3.1E-02	6.2E-03
20:55----21:25	8.5E-03 1.1E-02	7.2E-03 3.0E-02	3.0E-02	6.2E-03
21:10----21:40	1.9E-02 1.1E-02	7.2E-03 2.8E-02	3.1E-02	8.7E-03
21:25----21:55	3.1E-02 1.1E-02	7.2E-03 2.8E-02	3.3E-02	1.0E-02
21:40----22:10	3.6E-02 1.1E-02	7.2E-03 2.8E-02	3.2E-02	8.9E-03
21:55----22:25	3.7E-02 1.1E-02	7.2E-03 2.6E-02	3.2E-02	8.3E-03
22:10----22:40	3.9E-02 1.1E-02	7.2E-03 2.5E-02	3.3E-02	9.7E-03
22:25----22:55	4.1E-02 1.0E-02	7.2E-03 2.3E-02	3.2E-02	9.9E-03
22:40----23:10	3.8E-02 1.0E-02	7.2E-03 2.4E-02	3.0E-02	8.7E-03
22:55----23:25	3.6E-02 1.0E-02	7.2E-03 2.5E-02	3.0E-02	8.5E-03
23:10----23:40	3.9E-02 1.0E-02	7.2E-03 2.7E-02	3.2E-02	1.1E-02
23:25----23:55	3.8E-02 1.0E-02	7.2E-03 2.8E-02	3.3E-02	9.8E-03
23:40----00:10	3.2E-02 1.2E-02	7.2E-03 2.7E-02	3.2E-02	6.5E-03
23:55----00:25	3.1E-02 1.2E-02	7.2E-03 2.4E-02	3.1E-02	6.9E-03
00:10----00:40	3.5E-02 1.0E-02	7.2E-03 2.3E-02	3.3E-02	1.3E-02
00:25----00:55	4.2E-02 1.0E-02	7.6E-03 1.9E-02	3.5E-02	1.4E-02
00:40----01:10	4.0E-02 1.0E-02	8.3E-03 1.9E-02	3.1E-02	1.0E-02
00:55----01:25	2.9E-02 1.2E-02	8.6E-03 2.3E-02	2.9E-02	7.7E-03
01:10----01:40	2.0E-02 1.2E-02	8.6E-03 2.4E-02	2.8E-02	6.9E-03

MARATHON II #12, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
01:25----01:55	1.6E-02 9.9E-03	8.6E-03 2.5E-02	2.8E-02	6.6E-03
01:40----02:10	1.3E-02 9.8E-03	8.6E-03 2.6E-02	2.7E-02	6.2E-03
01:55----02:25	1.1E-02 9.8E-03	8.1E-03 2.6E-02	2.7E-02	6.2E-03
02:10----02:40	9.8E-03 9.7E-03	7.4E-03 2.7E-02	2.7E-02	6.1E-03
02:25----02:55	8.9E-03 9.5E-03	7.2E-03 2.6E-02	2.6E-02	5.7E-03
02:40----03:10	8.1E-03 9.4E-03	7.2E-03 2.7E-02	2.5E-02	4.9E-03
02:55----03:25	7.9E-03 9.2E-03	6.8E-03 2.8E-02	2.5E-02	5.3E-03
03:10----03:40	9.0E-03 9.3E-03	6.2E-03 2.6E-02	2.5E-02	5.8E-03
03:25----03:55	1.1E-02 9.4E-03	5.9E-03 2.8E-02	2.6E-02	5.8E-03
03:40----04:10	1.2E-02 9.8E-03	5.9E-03 2.8E-02	2.6E-02	6.1E-03
03:55----04:25	1.0E-02 9.8E-03	5.9E-03 2.5E-02	2.6E-02	5.9E-03
04:10----04:40	8.3E-03 9.6E-03	5.9E-03 2.6E-02	2.6E-02	5.7E-03
04:25----04:55	7.4E-03 9.6E-03	5.8E-03 2.6E-02	2.6E-02	6.1E-03
04:40----05:10	7.3E-03 9.3E-03	5.8E-03 2.4E-02	2.6E-02	6.0E-03
04:55----05:25	8.2E-03 9.2E-03	5.8E-03 2.5E-02	2.5E-02	5.7E-03
05:10----05:40	1.1E-02 9.4E-03	5.8E-03 2.5E-02	2.6E-02	6.2E-03
05:25----05:55	1.6E-02 9.4E-03	5.8E-03 2.5E-02	2.7E-02	7.1E-03
05:40----06:10	1.6E-02 9.3E-03	5.8E-03 2.6E-02	2.6E-02	6.7E-03
05:55----06:25	1.3E-02 9.2E-03	5.8E-03 2.9E-02	2.5E-02	5.6E-03

MARATHON II #12, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
06:10----06:40	2.4E-02 9.3E-03	5.8E-03 2.5E-02	2.6E-02	6.7E-03
06:25----06:55	4.5E-02 9.7E-03	5.9E-03 1.7E-02	2.9E-02	9.6E-03
06:40----07:10	6.5E-02 9.6E-03	7.8E-03 1.6E-02	3.2E-02	1.2E-02
06:55----07:25	7.6E-02 9.8E-03	1.0E-02 1.8E-02	3.3E-02	1.3E-02
07:10----07:40	7.2E-02 1.0E-02	1.2E-02 1.9E-02	3.3E-02	1.2E-02
07:25----07:55	5.7E-02 1.0E-02	1.3E-02 1.9E-02	3.1E-02	9.7E-03
07:40----08:10	5.1E-02 1.0E-02	1.3E-02 1.8E-02	3.1E-02	9.5E-03
07:55----08:25	4.9E-02 1.0E-02	1.3E-02 2.0E-02	3.1E-02	1.0E-02
08:10----08:40	3.5E-02 1.1E-02	1.2E-02 2.1E-02	3.7E-02	1.1E-02
08:25----08:55	2.5E-02 1.1E-02	1.1E-02 2.4E-02	3.8E-02	1.0E-02
08:40----09:10	2.2E-02 9.9E-03	9.3E-03 2.3E-02	2.9E-02	7.5E-03
08:55----09:25	1.8E-02 1.0E-02	8.7E-03 2.5E-02	2.9E-02	7.7E-03
09:10----09:40	2.3E-02 1.1E-02	8.6E-03 2.8E-02	3.2E-02	8.7E-03
09:25----09:55	2.7E-02 1.1E-02	8.6E-03 2.4E-02	3.1E-02	8.3E-03
09:40----10:10	2.0E-02 1.0E-02	8.6E-03 2.5E-02	3.0E-02	8.6E-03
09:55----10:25	1.3E-02 1.5E-02	8.3E-03 2.5E-02	3.2E-02	9.5E-03
10:10----10:40	1.1E-02 1.8E-02	7.6E-03 2.9E-02	3.9E-02	9.1E-03
10:25----10:55	1.0E-02 1.5E-02	7.2E-03 3.0E-02	4.3E-02	7.4E-03
10:40----11:10	9.8E-03 1.6E-02	7.2E-03 1.6E-02	4.7E-02	1.0E-02

MARATHON II #12, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
10:55----11:25	9.1E-03 1.9E-02	6.8E-03 1.3E-02	4.9E-02	1.2E-02

STATISTICS

NUMBER OF READINGS 378

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	2.73E-03	8.97E-02	2.31E-02	1.76E-02	1.70E-02	2.26E+00
SO2	5.83E-03	1.28E-02	8.03E-03	1.92E-03	7.83E-03	1.25E+00
NOX	2.41E-02	1.01E-01	3.22E-02	8.78E-03	3.14E-02	1.23E+00
NO2	1.00E-06	4.56E-02	8.02E-03	3.97E-03	6.54E-03	3.26E+00
NO	8.85E-03	4.14E-02	1.15E-02	3.90E-03	1.11E-02	1.26E+00
OZONE	6.32E-04	6.82E-02	2.49E-02	9.76E-03	2.22E-02	1.34E+00

MARATHON II #13

DATE: OCT 14 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: SHELL DEPOT (54510-53949); 1.4KM & 160DGS/SOURCE

TIME	H2S OZONE	NOX	NO2	NO
15:30----16:00	6.1E-03 2.2E-02	3.0E-02	8.4E-03	1.3E-03
15:45----16:15	4.0E-03 2.2E-02	3.0E-02	8.3E-03	1.3E-03
16:00----16:30	2.3E-03 2.7E-02	3.0E-02	8.0E-03	1.4E-03
16:15----16:45	8.1E-04 2.9E-02	3.0E-02	7.9E-03	1.4E-03
16:30----17:00	2.2E-04 2.5E-02	3.1E-02	7.6E-03	1.4E-03
16:45----17:15	1.3E-05 2.3E-02	3.2E-02	7.8E-03	1.5E-03
17:00----17:30	1.0E-06 2.2E-02	3.2E-02	7.7E-03	1.5E-03
17:15----17:45	1.0E-06 2.3E-02	3.2E-02	7.2E-03	1.5E-03
17:30----18:00	1.0E-06 2.5E-02	3.3E-02	7.3E-03	1.6E-03
17:45----18:15	1.0E-06 2.6E-02	3.3E-02	8.3E-03	1.5E-03
18:00----18:30	1.0E-06 2.5E-02	3.4E-02	8.5E-03	1.5E-03
18:15----18:45	1.0E-06 2.8E-02	3.3E-02	8.1E-03	1.5E-03
18:30----19:00	1.0E-06 2.5E-02	3.2E-02	7.9E-03	1.5E-03
18:45----19:15	1.0E-06 1.5E-02	3.4E-02	1.1E-02	1.4E-03
19:00----19:30	3.8E-03 1.5E-02	3.4E-02	1.1E-02	1.4E-03
19:15----19:45	6.8E-03 1.3E-02	3.7E-02	1.3E-02	1.5E-03

MARATHON II #13, CONT'D

TIME	H2S OZONE	NOX	NO2	NO
19:30----20:00	6.8E-03 1.1E-02	4.2E-02	1.7E-02	1.6E-03
19:45----20:15	7.4E-03 1.2E-02	4.1E-02	1.5E-02	1.6E-03
20:00----20:30	6.5E-03 7.8E-03	4.0E-02	1.5E-02	1.6E-03
20:15----20:45	5.3E-03 4.6E-03	4.2E-02	1.5E-02	1.7E-03
20:30----21:00	3.2E-03 2.8E-03	4.5E-02	1.4E-02	1.9E-03
20:45----21:15	1.7E-03 2.9E-03	4.9E-02	1.5E-02	2.0E-03
21:00----21:30	8.9E-04 2.6E-03	5.3E-02	1.6E-02	2.2E-03
21:15----21:45	3.3E-03 4.3E-03	4.4E-02	1.2E-02	1.9E-03
21:30----22:00	1.1E-02 5.2E-03	3.4E-02	1.1E-02	1.4E-03
21:45----22:15	7.8E-03 3.8E-03	3.2E-02	1.2E-02	1.3E-03
22:00----22:30	1.3E-04 5.5E-03	3.0E-02	9.9E-03	1.3E-03
22:15----22:45	1.1E-06 5.2E-03	3.4E-02	1.1E-02	1.4E-03
22:30----23:00	1.1E-06 4.0E-03	3.5E-02	1.2E-02	1.4E-03
22:45----23:15	1.1E-06 4.0E-03	3.4E-02	1.1E-02	1.4E-03
23:00----23:30	1.1E-06 2.4E-03	3.9E-02	1.1E-02	1.6E-03
23:15----23:45	1.1E-06 1.7E-03	5.6E-02	1.3E-02	2.7E-03
23:30----00:00	1.1E-06 3.2E-03	5.6E-02	1.3E-02	2.6E-03
23:45----00:15	1.1E-06 7.7E-03	3.6E-02	9.6E-03	1.6E-03
00:00----00:30	1.1E-06 9.2E-03	3.0E-02	8.5E-03	1.3E-03

MARATHON II #13, CONT'D PAGE 3

TIME	H2S OZONE	NOX	NO2	NO
00:15-----00:45	1.1E-06 5.5E-03	3.2E-02	1.0E-02	1.4E-03
00:30-----01:00	1.1E-06 1.0E-02	2.8E-02	7.8E-03	1.3E-03

STATISTICS

NUMBER OF READINGS 576

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	1.00E-06	4.47E-02	2.12E-03	4.95E-03	1.80E-05	5.44E+01
NOX	2.14E-02	1.01E-01	3.61E-02	1.00E-02	3.50E-02	1.26E+00
NO2	1.00E-06	4.06E-02	1.06E-02	4.72E-03	9.37E-03	2.06E+00
NO	1.06E-03	4.91E-03	1.57E-03	4.60E-04	1.53E-03	1.24E+00
OZONE	1.00E-06	6.09E-02	1.32E-02	1.33E-02	1.87E-03	4.34E+01

MARATHON II #14

DATE: OCT 15 1977
SCAN TIME: 180 SEC
AVERAGING TIME: 30 MIN
LOCATION: SHELL DEPOT (54500-53949); 1.3KM & 155DGS/SOURCE

TIME	H2S NO	SO2 OZONE	NOX	NO2
13:35----14:05	4.4E-03 1.3E-02	7.3E-03 1.8E-02	2.9E-02	4.2E-03
13:50----14:20	3.8E-02 1.3E-02	1.1E-02 1.6E-02	3.1E-02	6.0E-03
14:05----14:35	4.9E-02 1.3E-02	1.3E-02 1.5E-02	3.1E-02	6.8E-03
14:20----14:50	2.1E-02 1.2E-02	9.0E-03 1.5E-02	2.8E-02	4.3E-03
14:35----15:05	2.6E-02 1.2E-02	1.0E-02 1.4E-02	2.8E-02	4.2E-03
14:50----15:20	3.2E-02 1.3E-02	1.2E-02 2.0E-02	3.0E-02	5.5E-03
15:05----15:35	6.9E-02 1.3E-02	1.9E-02 2.6E-02	3.0E-02	6.1E-03
15:20----15:50	9.6E-02 1.3E-02	2.1E-02 2.4E-02	3.0E-02	5.7E-03
15:35----16:05	1.0E-01 1.3E-02	2.1E-02 2.2E-02	3.1E-02	6.6E-03
15:50----16:20	9.4E-02 1.3E-02	2.1E-02 2.5E-02	3.2E-02	7.1E-03
16:05----16:35	6.3E-02 1.3E-02	1.8E-02 2.9E-02	3.1E-02	6.4E-03
16:20----16:50	7.5E-02 1.5E-02	4.0E-02 2.9E-02	3.6E-02	8.2E-03
16:35----17:05	7.3E-02 1.6E-02	4.3E-02 2.6E-02	3.7E-02	9.3E-03
16:50----17:20	4.1E-02 1.3E-02	1.8E-02 2.6E-02	3.1E-02	5.7E-03
17:05----17:35	3.5E-02 1.3E-02	1.2E-02 2.7E-02	2.9E-02	3.8E-03
17:20----17:50	6.3E-02 1.3E-02	1.8E-02 2.8E-02	3.2E-02	6.5E-03

MARATHON II #14, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
17:35----18:05	5.2E-02 1.3E-02	1.6E-02 2.8E-02	3.0E-02	5.3E-03
17:50----18:20	1.9E-02 1.2E-02	9.7E-03 2.9E-02	2.7E-02	2.6E-03
18:05----18:35	1.2E-02 1.2E-02	9.0E-03 2.9E-02	2.6E-02	2.6E-03
18:20----18:50	7.8E-03 1.2E-02	8.5E-03 2.8E-02	2.6E-02	3.2E-03
18:35----19:05	5.4E-03 1.2E-02	8.5E-03 2.8E-02	2.7E-02	4.3E-03
18:50----19:20	3.5E-03 1.1E-02	8.5E-03 2.7E-02	2.6E-02	4.2E-03
19:05----19:35	2.1E-03 1.1E-02	8.5E-03 2.8E-02	2.4E-02	2.9E-03
19:20----19:50	1.4E-03 1.1E-02	8.5E-03 2.8E-02	2.4E-02	2.4E-03
19:35----20:05	7.5E-04 1.1E-02	8.5E-03 2.4E-02	2.6E-02	5.1E-03
19:50----20:20	6.1E-04 1.0E-02	8.5E-03 2.4E-02	2.6E-02	5.6E-03
20:05----20:35	5.3E-04 1.0E-02	8.1E-03 2.8E-02	2.4E-02	3.2E-03
20:20----20:50	3.4E-04 1.0E-02	7.6E-03 2.9E-02	2.3E-02	2.6E-03
20:35----21:05	2.4E-04 1.0E-02	7.3E-03 2.8E-02	2.3E-02	2.8E-03
20:50----21:20	2.9E-04 9.8E-03	7.3E-03 2.7E-02	2.3E-02	2.8E-03
21:05----21:35	3.5E-04 9.6E-03	7.3E-03 2.6E-02	2.2E-02	2.9E-03
21:20----21:50	4.4E-04 9.7E-03	7.3E-03 2.0E-02	2.5E-02	5.8E-03
21:35----22:05	3.6E-04 1.0E-02	7.3E-03 1.8E-02	2.7E-02	6.6E-03
21:50----22:20	1.7E-04 1.0E-02	7.3E-03 1.9E-02	2.6E-02	5.8E-03
22:05----22:35	2.7E-04 9.5E-03	7.3E-03 1.8E-02	2.5E-02	5.6E-03

MARATHON II #14, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
22:20----22:50	6.3E-04 9.3E-03	7.3E-03 1.8E-02	2.6E-02	7.8E-03
22:35----23:05	1.2E-03 9.3E-03	7.3E-03 1.7E-02	2.7E-02	8.2E-03
22:50----23:20	1.3E-03 9.4E-03	7.3E-03 1.3E-02	2.6E-02	7.3E-03
23:05----23:35	9.9E-04 9.4E-03	7.3E-03 1.5E-02	2.6E-02	7.0E-03
23:20----23:50	8.1E-04 9.3E-03	7.3E-03 1.9E-02	2.5E-02	6.5E-03
23:35----00:05	9.2E-04 9.4E-03	7.3E-03 1.7E-02	2.7E-02	8.2E-03
23:50----00:20	7.9E-04 9.4E-03	7.3E-03 1.5E-02	2.8E-02	9.1E-03
00:05----00:35	1.5E-03 9.5E-03	6.7E-03 2.0E-02	2.4E-02	5.3E-03
00:20----00:50	3.9E-03 1.1E-02	6.0E-03 1.6E-02	2.7E-02	6.2E-03
00:35----01:05	4.7E-03 1.2E-02	6.0E-03 1.0E-02	3.5E-02	1.1E-02
00:50----01:20	4.6E-03 1.1E-02	6.0E-03 1.4E-02	3.1E-02	9.0E-03
01:05----01:35	8.4E-03 1.0E-02	6.0E-03 1.5E-02	2.8E-02	5.2E-03
01:20----01:50	9.6E-03 1.0E-02	6.0E-03 1.5E-02	2.9E-02	7.0E-03
01:35----02:05	6.6E-03 8.9E-03	6.0E-03 1.7E-02	2.5E-02	6.9E-03
01:50----02:20	4.3E-03 8.6E-03	6.0E-03 1.8E-02	2.2E-02	4.8E-03
02:05----02:35	3.1E-03 8.6E-03	6.0E-03 2.0E-02	2.2E-02	4.3E-03
02:20----02:50	3.1E-03 8.7E-03	6.0E-03 2.3E-02	2.1E-02	3.1E-03
02:35----03:05	2.6E-03 8.7E-03	6.0E-03 2.3E-02	2.1E-02	2.9E-03
02:50----03:20	2.7E-03 8.8E-03	6.0E-03 1.8E-02	2.2E-02	4.4E-03

MARATHON II #14, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
03:05----03:35	2.6E-03 8.7E-03	6.0E-03 1.8E-02	2.2E-02	4.4E-03
03:20----03:50	2.4E-03 8.5E-03	6.0E-03 1.9E-02	2.1E-02	3.9E-03
03:35----04:05	2.4E-03 8.5E-03	6.0E-03 1.7E-02	2.2E-02	4.4E-03
03:50----04:20	2.6E-03 8.6E-03	6.0E-03 1.7E-02	2.2E-02	4.3E-03
04:05----04:35	2.6E-03 8.6E-03	6.0E-03 1.9E-02	2.2E-02	4.8E-03
04:20----04:50	2.8E-03 8.3E-03	6.0E-03 2.1E-02	2.2E-02	5.3E-03
04:35----05:05	5.3E-03 8.5E-03	6.0E-03 2.0E-02	2.1E-02	4.3E-03
04:50----05:20	5.4E-03 8.5E-03	6.0E-03 1.8E-02	2.1E-02	4.4E-03
05:05----05:35	4.8E-03 8.1E-03	6.0E-03 1.7E-02	2.1E-02	4.4E-03
05:20----05:50	5.5E-03 8.1E-03	6.0E-03 1.5E-02	2.1E-02	4.4E-03
05:35----06:05	4.3E-03 8.3E-03	6.0E-03 1.1E-02	2.2E-02	5.2E-03
05:50----06:20	3.4E-03 8.3E-03	6.0E-03 1.0E-02	2.3E-02	6.1E-03
06:05----06:35	3.0E-03 8.3E-03	6.0E-03 1.2E-02	2.3E-02	6.2E-03
06:20----06:50	3.0E-03 8.6E-03	6.0E-03 1.1E-02	2.5E-02	7.6E-03
06:35----07:05	2.9E-03 1.0E-02	6.0E-03 7.3E-03	3.1E-02	1.1E-02
06:50----07:20	2.4E-03 1.0E-02	6.0E-03 1.1E-02	2.9E-02	9.1E-03
07:05----07:35	2.0E-03 9.1E-03	6.0E-03 1.5E-02	2.5E-02	6.4E-03
07:20----07:50	2.3E-03 9.2E-03	6.0E-03 1.5E-02	2.6E-02	8.1E-03
07:35----08:05	2.3E-03 9.1E-03	6.0E-03 1.4E-02	2.6E-02	7.7E-03

MARATHON II #14, CONT'D

TIME	H2S NO	SO2 OZONE	NOX	NO2
07:50----08:20	2.0E-03 8.6E-03	6.0E-03 1.3E-02	2.3E-02	5.7E-03
08:05----08:35	2.0E-03 8.7E-03	6.1E-03 1.2E-02	2.4E-02	6.4E-03
08:20----08:50	2.5E-03 9.2E-03	6.1E-03 1.1E-02	2.7E-02	8.4E-03
08:35----09:05	3.0E-03 9.1E-03	6.1E-03 1.0E-02	2.6E-02	7.8E-03
08:50----09:20	2.8E-03 9.0E-03	6.0E-03 1.1E-02	2.5E-02	6.4E-03
09:05----09:35	2.6E-03 8.7E-03	6.0E-03 1.3E-02	2.3E-02	4.6E-03
09:20----09:50	3.3E-03 8.4E-03	6.0E-03 1.6E-02	2.1E-02	3.7E-03
09:35----10:05	4.0E-03 8.5E-03	6.0E-03 1.7E-02	2.1E-02	3.2E-03
09:50----10:20	4.1E-03 8.6E-03	6.0E-03 2.0E-02	2.0E-02	2.7E-03
10:05----10:35	3.4E-03 9.5E-03	6.0E-03 2.2E-02	2.2E-02	3.2E-03
10:20----10:50	2.8E-03 1.1E-02	6.0E-03 2.2E-02	2.6E-02	5.0E-03

STATISTICS

NUMBER OF READINGS 426

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
H2S	1.00E-06	3.05E-01	1.35E-02	3.03E-02	1.78E-03	2.12E+01
SO2	6.03E-03	9.63E-02	9.01E-03	8.68E-03	7.75E-03	1.54E+00
NOX	1.93E-02	5.63E-02	2.59E-02	5.01E-03	2.55E-02	1.19E+00
NO2	1.00E-06	2.25E-02	5.56E-03	3.03E-03	4.70E-03	2.10E+00
NO	7.80E-03	2.31E-02	1.03E-02	2.09E-03	1.01E-02	1.20E+00
OZONE	3.74E-03	4.89E-02	1.94E-02	8.23E-03	1.74E-02	1.66E+00

MARATHON II #15

DATE: OCT 18 1977
SCAN TIME: 120 SEC
AVERAGING TIME: 30 MIN
LOCATION: HOWE ST. (END) (54510-53949): 1.4KM & 160DGS/SOURCE

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
13:21----13:51	5.6E+00 4.6E-01 5.5E-03 48	1.5E-01 1.2E+00 2.2E-02 981	1.4E+00 1.5E-02 5.0E-02 8	2.0E-03 8.6E-03 16 36
13:31----14:01	5.5E+00 4.2E-01 3.9E-03 46	1.1E-01 1.2E+00 2.3E-02 981	1.4E+00 1.4E-02 4.9E-02 7	6.0E-04 9.2E-03 16 37
13:41----14:11	2.9E+00 4.9E-01 4.4E-03 44	6.7E-02 1.2E+00 2.4E-02 981	1.6E+00 1.5E-02 4.9E-02 7	1.5E-04 1.0E-02 16 28
13:51----14:21	8.6E-01 4.8E-01 4.2E-03 42	5.1E-02 1.2E+00 2.5E-02 981	1.6E+00 1.5E-02 4.8E-02 8	1.0E-04 1.0E-02 17 21
14:01----14:31	2.3E-01 5.8E-01 4.6E-03 40	4.6E-02 1.2E+00 2.6E-02 981	1.7E+00 1.4E-02 4.7E-02 8	4.8E-05 8.4E-03 17 18
14:11----14:41	2.0E-01 5.4E-01 3.4E-03 38	4.2E-02 1.2E+00 2.7E-02 981	1.6E+00 1.2E-02 4.6E-02 8	2.3E-05 6.4E-03 18 19
14:21----14:51	2.0E-01 5.4E-01 5.9E-03 37	4.0E-02 1.2E+00 2.8E-02 981	1.6E+00 1.2E-02 4.5E-02 7	2.3E-05 6.3E-03 18 31
14:31----15:01	7.8E-01 4.4E-01 8.7E-03 37	3.9E-02 1.2E+00 2.8E-02 981	1.5E+00 9.0E-03 4.4E-02 8	5.8E-05 5.0E-03 18 40
14:41----15:11	6.3E+00 4.2E-01 9.1E-03 37	3.8E-02 1.2E+00 2.8E-02 981	1.4E+00 1.1E-02 4.2E-02 6	5.8E-05 5.1E-03 18 41
14:51----15:21	7.1E+00 4.4E-01 7.6E-03 37	3.8E-02 1.2E+00 2.7E-02 981	1.5E+00 1.2E-02 4.0E-02 5	8.4E-05 5.7E-03 18 51

MARATHON II #15, CONT'D PAGE 2

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
15:01----15:31	1.2E+01 4.7E-01 4.3E-03 35	3.7E-02 1.2E+00 2.7E-02 981	1.5E+00 1.2E-02 3.7E-02 5	2.7E-05 6.5E-03 18 41
15:11----15:41	7.9E+00 6.4E-01 3.9E-03 35	3.7E-02 1.2E+00 2.7E-02 981	1.6E+00 1.1E-02 3.5E-02 6	2.7E-05 6.0E-03 19 44
15:21----15:51	1.2E+01 1.2E+00 7.1E-03 33	3.6E-02 1.3E+00 2.7E-02 981	2.3E+00 1.6E-02 3.4E-02 5	2.7E-04 7.2E-03 19 36
15:31----16:01	2.1E+01 1.3E+00 1.8E-02 33	3.7E-02 1.3E+00 2.7E-02 981	2.3E+00 3.1E-02 3.5E-02 3	9.8E-04 1.5E-02 19 22
15:41----16:11	2.0E+01 1.1E+00 2.6E-02 32	3.8E-02 1.3E+00 2.8E-02 981	2.2E+00 4.0E-02 3.4E-02 2	1.3E-03 1.8E-02 19 12
15:51----16:21	1.7E+01 5.2E-01 2.4E-02 32	3.8E-02 1.2E+00 2.8E-02 982	1.7E+00 4.0E-02 3.3E-02 2	1.2E-03 2.1E-02 20 8
16:01----16:31	1.1E+01 5.3E-01 2.0E-02 31	3.9E-02 1.2E+00 2.8E-02 982	1.8E+00 4.4E-02 3.0E-02 3	3.9E-03 2.6E-02 20 358
16:11----16:41	1.4E+01 5.5E-01 2.7E-02 31	4.4E-02 1.2E+00 2.8E-02 982	1.9E+00 5.4E-02 2.6E-02 3	8.2E-03 2.8E-02 20 328
16:21----16:51	1.3E+01 8.3E-01 3.4E-02 34	4.6E-02 1.3E+00 2.7E-02 982	1.7E+00 6.1E-02 1.9E-02 4	9.4E-03 2.8E-02 20 331
16:31----17:01	7.5E+00 7.7E-01 3.6E-02 42	4.6E-02 1.3E+00 2.8E-02 982	1.5E+00 5.5E-02 1.3E-02 2	6.7E-03 2.3E-02 10 331
16:41----17:11	5.8E+00 8.2E-01 4.7E-02 50	4.2E-02 1.3E+00 2.8E-02 982	1.5E+00 6.9E-02 9.2E-03 2	2.9E-03 2.4E-02 16 293

MARATHON II #15, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
16:51----17:21	6.0E+00 4.7E-01 7.0E-02 57	4.0E-02 1.2E+00 2.8E-02 982	1.5E+00 9.1E-02 8.5E-03 2	1.6E-03 2.4E-02 14 209
17:01----17:31	6.4E+01 2.1E+00 1.3E-01 60	4.0E-02 1.4E+00 2.5E-02 982	5.0E+00 1.4E-01 7.7E-03 1	2.6E-03 2.3E-02 13 207
17:11----17:41	7.8E+01 2.9E+00 1.5E-01 59	4.8E-02 1.5E+00 2.1E-02 982	6.6E+00 1.6E-01 7.8E-03 0	8.4E-03 2.0E-02 13 198
17:21----17:51	8.9E+01 3.1E+00 1.5E-01 56	7.0E-02 1.5E+00 1.8E-02 983	7.0E+00 1.6E-01 8.6E-03 3	2.4E-02 2.5E-02 13 333
17:31----18:01	3.5E+01 1.6E+00 9.5E-02 51	8.0E-02 1.3E+00 2.0E-02 983	3.6E+00 1.2E-01 8.3E-03 5	2.9E-02 2.1E-02 14 335

STATISTICS

NUMBER OF READINGS 144

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	6.49E+02	1.74E+01	6.32E+01	3.39E-03	2.83E+03
H2S	3.41E-02	3.60E-01	5.72E-02	4.13E-02	5.01E-02	1.56E+00
THC	1.36E+00	2.79E+01	2.21E+00	3.47E+00	1.70E+00	1.65E+00
SO2	1.00E-06	6.68E-02	5.05E-03	1.12E-02	1.34E-04	5.85E+01
THC-CH4	3.74E-01	1.52E+01	8.77E-01	1.86E+00	5.46E-01	1.96E+00
CH4	1.15E+00	3.54E+00	1.24E+00	2.67E-01	1.22E+00	1.16E+00
NOX	7.12E-03	4.69E-01	4.79E-02	5.85E-02	2.77E-02	2.82E+00
NO2	1.00E-06	1.43E-01	1.51E-02	1.71E-02	6.47E-03	1.09E+01
NO	2.09E-03	5.58E-01	3.41E-02	5.90E-02	1.29E-02	4.11E+00
OZONE	5.38E-03	3.01E-02	2.56E-02	4.19E-03	2.51E-02	1.26E+00
SOLAR RAD	4.23E-03	5.04E-02	3.02E-02	1.65E-02	2.38E-02	2.19E+00
TEMP	12	21	17	2		
HUMIDITY	29	63	42	9	41	1
BAROMETER	981	983	982	1	982	1
WIND SPEED	0	20	6	4	2	49

MARATHON II #16

DATE: OCT 18 1977
SCAN TIME: 90 SEC
AVERAGING TIME: 30 MIN
LOCATION: HOWE ST. (END) (54510-53949): 1.4KM & 160DGS/SOURCE

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
19:13-----19:43	1.6E+01 8.3E-01 4.1E-02 61	4.5E-02 1.2E+00 2.4E-02 984	2.7E+00 5.6E-02 1.0E-06 2	2.3E-03 1.6E-02 11 360
19:28----19:58	1.6E+01 1.1E+00 5.7E-02 64	4.5E-02 1.3E+00 2.2E-02 984	2.8E+00 7.2E-02 1.0E-06 1	2.5E-03 1.9E-02 11 340
19:43----20:13	4.9E+00 8.1E-01 8.1E-02 69	4.4E-02 1.2E+00 2.1E-02 985	1.9E+00 1.1E-01 1.0E-06 1	2.4E-03 2.6E-02 10 355
19:58----20:28	3.2E+01 1.4E+00 9.8E-02 72	4.4E-02 1.3E+00 1.7E-02 985	3.3E+00 1.2E-01 1.0E-06 1	1.6E-03 2.5E-02 10 28
20:13----20:43	4.1E+01 1.5E+00 9.2E-02 73	4.5E-02 1.4E+00 1.6E-02 985	3.3E+00 1.0E-01 1.0E-06 2	7.4E-04 1.7E-02 10 26
20:28----20:58	2.1E+01 7.3E-01 6.3E-02 73	4.3E-02 1.2E+00 1.8E-02 985	2.0E+00 7.7E-02 1.0E-06 2	1.0E-06 1.6E-02 9 15
20:43----21:13	1.1E+01 7.2E-01 5.6E-02 73	4.3E-02 1.3E+00 1.8E-02 985	1.8E+00 6.6E-02 1.0E-06 2	1.0E-06 1.5E-02 9 29
20:58----21:28	1.5E+01 8.8E-01 5.2E-02 74	4.2E-02 1.3E+00 1.8E-02 985	2.1E+00 6.4E-02 1.0E-06 3	1.0E-06 1.5E-02 9 31
21:13----21:43	3.0E+01 9.8E-01 5.0E-02 75	4.1E-02 1.3E+00 1.6E-02 985	2.4E+00 7.1E-02 1.0E-06 3	1.0E-06 2.0E-02 9 355
21:28----21:58	2.8E+01 7.3E-01 5.9E-02 76	4.3E-02 1.3E+00 1.6E-02 986	1.9E+00 8.0E-02 1.0E-06 2	1.0E-06 2.1E-02 9 330

MARATHON II #16, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
21:43----22:13	2.0E+01 1.6E+00 8.4E-02 76	4.5E-02 1.4E+00 1.5E-02 986	2.4E+00 8.2E-02 1.0E-06 2	1.0E-06 1.2E-02 9 351
21:58----22:28	1.0E+01 1.6E+00 8.5E-02 76	4.3E-02 1.4E+00 1.5E-02 986	2.3E+00 8.5E-02 1.0E-06 3	1.0E-06 1.5E-02 8 4
22:13----22:43	1.6E-01 4.6E-01 6.6E-02 78	4.4E-02 1.2E+00 1.6E-02 986	1.5E+00 8.0E-02 1.0E-06 3	1.0E-06 1.7E-02 8 355
22:28----22:58	1.8E-04 4.4E-01 5.7E-02 78	4.3E-02 1.2E+00 1.6E-02 986	1.5E+00 6.7E-02 1.0E-06 4	1.0E-06 1.1E-02 8 2
22:43----23:13	1.8E-04 4.2E-01 4.7E-02 76	4.1E-02 1.2E+00 1.6E-02 986	1.5E+00 5.8E-02 1.0E-06 5	1.0E-06 1.2E-02 8 9
22:58----23:28	1.8E-04 4.2E-01 3.6E-02 76	4.0E-02 1.2E+00 1.6E-02 986	1.5E+00 4.8E-02 1.0E-06 6	1.0E-06 1.3E-02 8 10
23:13----23:43	1.8E-04 4.3E-01 2.8E-02 74	3.9E-02 1.2E+00 1.5E-02 987	1.5E+00 4.1E-02 1.0E-06 7	1.0E-06 1.3E-02 8 8
23:28----23:58	1.1E+01 4.9E-01 3.4E-02 73	4.0E-02 1.2E+00 1.4E-02 987	1.6E+00 4.8E-02 1.0E-06 4	9.9E-06 1.5E-02 9 354
23:43----00:13	1.1E+01 5.2E-01 4.2E-02 73	4.1E-02 1.2E+00 1.4E-02 987	1.6E+00 5.5E-02 1.0E-06 5	9.9E-06 1.5E-02 9 3
23:58----00:28	1.8E-04 4.8E-01 3.8E-02 72	4.0E-02 1.2E+00 1.4E-02 987	1.6E+00 4.9E-02 1.0E-06 5	1.0E-06 1.1E-02 9 2
00:13----00:43	1.8E-04 4.9E-01 3.7E-02 73	4.0E-02 1.2E+00 1.4E-02 987	1.6E+00 4.7E-02 1.0E-06 5	1.0E-06 1.1E-02 9 344

MARATHON II #16, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
00:28-----00:58	1.8E-04 5.0E-01 3.8E-02 74	4.2E-02 1.2E+00 1.3E-02 987	1.6E+00 4.9E-02 1.0E-06 6	1.0E-06 1.1E-02 9 346
00:43-----01:13	1.8E-04 4.7E-01 3.8E-02 74	4.2E-02 1.2E+00 1.3E-02 987	1.6E+00 4.9E-02 1.0E-06 6	1.0E-06 1.1E-02 9 359
00:58-----01:28	1.8E-04 4.3E-01 3.3E-02 74	3.8E-02 1.2E+00 1.3E-02 987	1.5E+00 4.5E-02 1.0E-06 6	1.0E-06 1.2E-02 9 22
01:13-----01:43	1.8E-04 4.3E-01 2.8E-02 73	3.7E-02 1.2E+00 1.3E-02 987	1.5E+00 3.9E-02 1.0E-06 6	1.0E-06 1.2E-02 9 32
01:28-----01:58	1.6E+01 4.6E-01 3.1E-02 73	3.7E-02 1.2E+00 1.3E-02 988	1.5E+00 4.1E-02 1.0E-06 5	1.0E-06 1.1E-02 9 27
01:43-----02:13	1.6E+01 4.7E-01 3.5E-02 73	3.7E-02 1.2E+00 1.3E-02 988	1.6E+00 4.5E-02 1.0E-06 3	1.0E-06 1.1E-02 9 22
01:58-----02:28	1.8E-04 4.3E-01 3.6E-02 72	3.6E-02 1.2E+00 1.2E-02 988	1.5E+00 4.7E-02 1.0E-06 3	1.0E-06 1.2E-02 9 19
02:13-----02:43	1.8E-04 4.3E-01 4.1E-02 72	3.5E-02 1.2E+00 1.2E-02 988	1.5E+00 5.1E-02 1.0E-06 3	1.0E-06 1.2E-02 9 25
02:28-----02:58	1.8E-04 4.4E-01 4.9E-02 72	3.6E-02 1.3E+00 1.1E-02 988	1.5E+00 5.9E-02 1.0E-06 2	1.0E-06 1.2E-02 9 30
02:43-----03:13	1.6E+00 1.1E+00 6.9E-02 72	3.5E-02 1.3E+00 9.7E-03 988	2.2E+00 8.6E-02 1.0E-06 1	1.0E-06 1.8E-02 9 22
02:58-----03:28	1.6E+00 1.1E+00 8.0E-02 71	3.5E-02 1.3E+00 9.8E-03 988	2.2E+00 9.6E-02 1.0E-06 2	1.0E-06 1.7E-02 9 14

MARATHON II #16, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
03:13----03:43	1.8E-04 4.4E-01 7.5E-02 71	3.5E-02 1.3E+00 1.1E-02 988	1.5E+00 8.3E-02 1.0E-06 2	1.0E-06 1.1E-02 9 9
03:28----03:58	5.6E+00 6.3E-01 9.2E-02 71	3.5E-02 1.3E+00 1.1E-02 989	2.1E+00 9.7E-02 1.0E-06 1	2.5E-05 9.3E-03 9 16
03:43----04:13	6.5E+00 1.2E+00 1.1E-01 71	3.4E-02 1.4E+00 1.1E-02 989	2.8E+00 1.1E-01 1.0E-06 1	2.5E-05 8.1E-03 9 17
03:58----04:28	9.6E-01 9.9E-01 1.0E-01 71	3.5E-02 1.4E+00 1.1E-02 989	2.2E+00 1.0E-01 1.0E-06 1	1.0E-06 9.7E-03 9 0
04:13----04:43	2.0E-04 4.5E-01 9.5E-02 72	3.5E-02 1.3E+00 1.1E-02 989	1.5E+00 1.0E-01 1.0E-06 2	1.0E-06 1.1E-02 9 360
04:28----04:58	2.2E+00 6.3E-01 9.9E-02 72	3.6E-02 1.3E+00 1.1E-02 989	1.7E+00 1.3E-01 1.0E-06 2	7.6E-05 2.6E-02 9 3
04:43----05:13	3.9E+00 7.9E-01 1.4E-01 72	3.7E-02 1.3E+00 1.1E-02 989	2.0E+00 1.7E-01 1.0E-06 1	2.4E-04 3.5E-02 9 10
04:58----05:28	2.0E+00 6.1E-01 1.4E-01 71	3.6E-02 1.3E+00 1.2E-02 989	1.9E+00 1.5E-01 1.0E-06 2	1.7E-04 2.0E-02 9 15
05:13----05:43	4.1E-01 1.0E+00 1.1E-01 71	3.6E-02 1.4E+00 1.3E-02 989	1.6E+00 1.2E-01 1.0E-06 2	1.0E-06 1.9E-02 8 18
05:28----05:58	2.1E-04 1.0E+00 9.9E-02 74	3.6E-02 1.4E+00 1.3E-02 989	1.5E+00 1.1E-01 1.0E-06 1	1.0E-06 1.8E-02 8 1
05:43----06:13	2.1E-04 4.4E-01 1.1E-01 77	3.6E-02 1.3E+00 1.4E-02 990	1.5E+00 1.1E-01 1.0E-06 1	1.0E-06 1.1E-02 7 353

MARATHON II #16, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
05:58-----06:28	2.1E-04 4.4E-01 1.1E-01 79	3.7E-02 1.3E+00 1.4E-02 990	1.5E+00 1.2E-01 1.0E-06 1	1.0E-06 1.2E-02 7 358
06:13-----06:43	2.1E-04 4.5E-01 1.1E-01 81	3.8E-02 1.3E+00 1.4E-02 990	1.5E+00 1.1E-01 1.0E-06 1	1.0E-06 1.2E-02 6 15
06:28-----06:58	2.1E-04 4.6E-01 9.3E-02 81	3.7E-02 1.3E+00 1.3E-02 990	1.6E+00 1.0E-01 1.0E-06 2	1.0E-06 1.2E-02 6 27
06:43-----07:13	2.1E-04 4.8E-01 8.1E-02 80	3.7E-02 1.3E+00 1.0E-02 990	1.6E+00 9.3E-02 1.0E-06 2	1.0E-06 1.4E-02 6 32
06:58-----07:28	2.1E-04 4.8E-01 7.2E-02 79	3.7E-02 1.3E+00 9.2E-03 990	1.6E+00 8.5E-02 1.0E-06 2	1.0E-06 1.5E-02 6 32
07:13-----07:43	2.1E-04 4.8E-01 6.9E-02 78	3.7E-02 1.3E+00 1.2E-02 991	1.6E+00 8.0E-02 1.0E-06 1	1.0E-06 1.4E-02 7 25
07:28-----07:58	2.1E-04 5.7E-01 8.4E-02 77	3.6E-02 1.3E+00 1.5E-02 991	1.7E+00 9.3E-02 1.4E-06 1	1.0E-06 1.2E-02 7 2
07:43-----08:13	2.1E-04 5.7E-01 9.7E-02 75	3.6E-02 1.3E+00 1.5E-02 991	1.7E+00 1.1E-01 3.8E-05 1	1.0E-06 1.2E-02 7 9
07:58-----08:28	2.1E-04 4.7E-01 9.3E-02 74	3.5E-02 1.3E+00 1.4E-02 991	1.6E+00 1.0E-01 2.0E-04 1	1.0E-06 1.3E-02 8 23
08:13-----08:43	2.1E-04 4.8E-01 9.0E-02 73	3.5E-02 1.3E+00 1.3E-02 991	1.6E+00 1.0E-01 5.8E-04 1	1.0E-06 1.4E-02 8 21
08:28-----08:58	2.1E-04 4.8E-01 9.2E-02 73	3.5E-02 1.3E+00 1.3E-02 991	1.6E+00 1.0E-01 1.3E-03 1	1.0E-06 1.4E-02 8 21

MARATHON II #16, CONT'D

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
08:43----09:13	7.2E+00 6.2E-01 9.8E-02 72	3.4E-02 1.3E+00 1.5E-02 991	1.9E+00 1.2E-01 2.1E-03 1	1.0E-06 1.7E-02 8 17
08:58----09:28	1.2E+01 6.2E-01 1.0E-01 72	3.4E-02 1.3E+00 1.6E-02 991	1.8E+00 1.2E-01 2.8E-03 2	1.0E-06 1.7E-02 8 12
09:13----09:43	4.5E+00 4.6E-01 9.4E-02 70	3.4E-02 1.3E+00 1.7E-02 991	1.5E+00 1.0E-01 4.2E-03 3	1.0E-06 1.3E-02 8 18
09:28----09:58	2.1E-04 4.4E-01 8.9E-02 69	3.4E-02 1.3E+00 1.7E-02 991	1.5E+00 1.0E-01 7.0E-03 2	1.0E-06 1.5E-02 8 29

STATISTICS

NUMBER OF READINGS 595

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	3.46E+02	5.86E+00	3.06E+01	6.72E-06	2.03E+02
H2S	6.20E-03	5.17E-02	3.82E-02	4.34E-03	3.79E-02	1.15E+00
THC	1.41E+00	1.42E+01	1.81E+00	1.44E+00	1.66E+00	1.37E+00
SO2	1.00E-06	6.25E-03	2.06E-04	7.34E-04	2.04E-06	9.04E+00
THC-CH4	4.00E-01	1.29E+01	6.83E-01	1.19E+00	5.20E-01	1.63E+00
CH4	1.17E+00	3.42E+00	1.28E+00	1.97E-01	1.27E+00	1.11E+00
NOX	1.61E-02	4.91E-01	8.46E-02	4.06E-02	7.73E-02	1.52E+00
NO2	1.00E-06	2.30E-01	1.48E-02	1.56E-02	8.95E-03	7.14E+00
NO	5.58E-03	4.04E-01	7.24E-02	3.61E-02	6.40E-02	1.69E+00
OZONE	3.80E-03	2.67E-02	1.43E-02	3.43E-03	1.39E-02	1.27E+00
SOLAR RAD	1.00E-06	1.36E-02	4.88E-04	1.81E-03	2.85E-06	1.39E+01
TEMP	6	12	8	1		
HUMIDITY	58	82	73	4	73	1
BAROMETER	984	992	988	2	988	1
WIND SPEED	0	18	3	3	0	191

MARATHON II #17

DATE: OCT 19 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: HOWE ST. (END) (54510-53949); 1.4KM & 160DGS/SOURCE

TIME	CO THC-CH4 NO HUMIDITY	H2S CH4 OZONE BAROMETER	THC NOX SOLAR RAD WIND SPEED	SO2 NO2 TEMP WIND DIRECTI
10:17----10:47	1.2E+01 5.6E-01 8.2E-02 61	2.0E-02 1.3E+00 1.8E-02 992	1.7E+00 9.4E-02 3.5E-02 1	2.8E-03 3.2E-02 10 339
10:22----10:52	1.2E+01 5.6E-01 8.2E-02 61	2.1E-02 1.3E+00 1.8E-02 992	1.7E+00 9.5E-02 3.6E-02 2	3.2E-03 3.3E-02 10 311
10:27----10:57	1.1E+01 5.6E-01 7.7E-02 61	1.9E-02 1.3E+00 1.7E-02 992	1.7E+00 9.1E-02 3.4E-02 2	3.9E-03 3.3E-02 10 303
10:32----11:02	6.7E-01 4.5E-01 4.0E-02 62	1.9E-02 1.2E+00 1.8E-02 992	1.5E+00 5.4E-02 3.2E-02 2	5.0E-03 1.6E-02 10 300
10:37----11:07	2.6E-02 4.3E-01 2.4E-02 63	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.0E-02 2.9E-02 2	6.7E-03 1.6E-02 10 297
10:42----11:12	2.6E-02 4.3E-01 2.3E-02 65	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.1E-02 2.5E-02 2	9.4E-03 1.7E-02 10 288
10:47----11:17	2.6E-02 4.3E-01 2.6E-02 66	1.7E-02 1.2E+00 1.8E-02 992	1.5E+00 4.4E-02 2.4E-02 2	1.2E-02 1.8E-02 9 281

MARATHON II #17 CONT'D

STATISTICS

NUMBER OF READINGS 60

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	2.09E+02	5.81E+00	2.82E+01	3.44E-05	6.94E+02
H2S	8.73E-03	2.49E-02	1.86E-02	3.87E-03	1.81E-02	1.27E+00
THC	1.47E+00	3.98E+00	1.61E+00	4.41E-01	1.58E+00	1.20E+00
SO2	1.80E-03	2.30E-02	7.40E-03	6.23E-03	5.18E-03	2.35E+00
THC-CH4	4.14E-01	2.09E+00	4.94E-01	2.72E-01	4.65E-01	1.32E+00
CH4	1.24E+00	1.51E+00	1.25E+00	3.49E-02	1.25E+00	1.03E+00
NOX	1.86E-02	7.14E-01	6.93E-02	9.94E-02	4.95E-02	1.98E+00
NO2	1.00E-06	5.86E-01	2.48E-02	7.44E-02	7.18E-03	1.60E+01
NO	6.88E-03	5.35E-01	5.40E-02	8.73E-02	3.17E-02	2.45E+00
OZONE	7.82E-03	2.00E-02	1.79E-02	1.98E-03	1.78E-02	1.15E+00
SOLAR RAD	9.03E-03	4.61E-02	2.94E-02	1.18E-02	2.66E-02	1.62E+00
TEMP	9	10	10	1		
HUMIDITY	57	68	63	3	63	1
BAROMETER	991	992	992	0	992	1
WIND SPEED	0	7	2	2	0	82

MARATHON II #18

DATE: OCT 19 1977
SCAN TIME: 60 SEC
AVERAGING TIME: 30 MIN
LOCATION: SHORE RD. (54510-53972): 1.3KM & 030DGS/SOURCE

TIME					
	CO	H2S	THC	SO2	
	THC-CH4	CH4	NOX	NO2	
	NO	OZONE	SOLAR RAD	TEMP	
	HUMIDITY	BAROMETER	WIND SPEED	WIND DIRECTI	
19:06----19:36	9.7E+00	3.8E-02	1.5E+00	1.1E-02	
	4.2E-01	1.2E+00	1.6E-02	1.0E-02	
	5.2E-03	1.9E-02	1.0E-06	9	
	85	993	11	235	
19:21----19:51	1.4E+01	3.7E-02	1.4E+00	1.4E-02	
	4.2E-01	1.2E+00	1.6E-02	8.5E-03	
	7.9E-03	1.9E-02	1.0E-06	9	
	87	993	11	235	
19:36----20:06	1.5E+01	4.2E-02	1.4E+00	1.9E-02	
	4.1E-01	1.2E+00	1.8E-02	9.3E-03	
	8.0E-03	1.8E-02	1.0E-06	9	
	87	993	12	244	
19:51----20:21	1.3E+01	4.2E-02	1.4E+00	2.1E-02	
	4.1E-01	1.2E+00	1.7E-02	9.7E-03	
	7.0E-03	1.7E-02	1.0E-06	9	
	87	993	11	246	
20:06----20:36	1.2E+01	4.1E-02	1.4E+00	2.4E-02	
	4.0E-01	1.2E+00	1.6E-02	8.0E-03	
	7.7E-03	1.7E-02	1.0E-06	9	
	86	993	11	249	
20:21----20:51	1.3E+01	4.1E-02	1.4E+00	2.5E-02	
	4.0E-01	1.2E+00	1.8E-02	1.1E-02	
	6.7E-03	1.8E-02	1.0E-06	9	
	86	993	11	251	
20:36----21:06	1.3E+01	4.2E-02	1.5E+00	2.2E-02	
	4.3E-01	1.2E+00	1.7E-02	1.1E-02	
	5.8E-03	1.8E-02	1.0E-06	9	
	88	993	9	235	
20:51----21:21	1.0E+01	3.2E-02	1.5E+00	1.4E-02	
	4.6E-01	1.2E+00	1.2E-02	7.5E-03	
	4.3E-03	2.0E-02	1.0E-06	9	
	91	993	9	214	
21:06----21:36	7.0E+00	2.2E-02	1.5E+00	8.7E-03	
	4.4E-01	1.2E+00	1.2E-02	7.1E-03	
	4.7E-03	2.1E-02	1.0E-06	9	
	93	993	9	212	
21:21----21:51	6.5E+00	1.8E-02	1.5E+00	7.0E-03	
	4.2E-01	1.2E+00	1.4E-02	7.3E-03	
	5.8E-03	2.1E-02	1.0E-06	8	
	95	993	10	208	

MARATHON II #18, CONT'D

TIME	CO	H2S	THC	SO2
	THC-CH4	CH4	NOX	NO2
	NO	OZONE	SOLAR RAD	TEMP
	HUMIDITY	BAROMETER	WIND SPEED	WIND DIRECTI
21:36----22:06	6.6E+00	1.8E-02	1.5E+00	5.9E-03
	4.3E-01	1.3E+00	1.5E-02	7.7E-03
	7.0E-03	2.1E-02	1.0E-06	8
	98	993	11	203
21:51----22:21	6.2E+00	1.8E-02	1.5E+00	5.0E-03
	4.3E-01	1.3E+00	1.6E-02	8.1E-03
	7.4E-03	2.0E-02	1.0E-06	8
	101	993	11	201
22:06----22:36	6.5E+00	1.7E-02	1.5E+00	4.4E-03
	4.3E-01	1.3E+00	1.8E-02	8.5E-03
	9.3E-03	2.0E-02	1.0E-06	8
	103	993	11	201
22:21----22:51	7.1E+00	1.6E-02	1.5E+00	4.0E-03
	4.4E-01	1.3E+00	2.0E-02	8.3E-03
	1.1E-02	2.0E-02	1.0E-06	7
	104	993	12	203
22:36----23:06	7.6E+00	1.5E-02	1.5E+00	3.7E-03
	4.3E-01	1.3E+00	1.9E-02	7.9E-03
	1.1E-02	2.1E-02	1.0E-06	8
	104	993	13	203
22:51----23:21	6.0E+00	1.5E-02	1.5E+00	3.3E-03
	4.2E-01	1.3E+00	1.7E-02	7.6E-03
	8.7E-03	2.2E-02	1.0E-06	8
	104	993	15	203

STATISTICS

NUMBER OF READINGS 256

POLLUTANT	MINIMUM VALUE	MAXIMUM VALUE	ARITHMETIC MEAN	STANDARD DEVIATION	GEOMETRIC MEAN	GEOMETRIC STD. DEV.
CO	1.00E-06	1.87E+01	9.27E+00	4.33E+00	4.84E+00	2.01E+01
H2S	1.31E-02	1.09E-01	2.85E-02	1.62E-02	2.52E-02	1.60E+00
THC	1.39E+00	1.82E+00	1.48E+00	5.50E-02	1.49E+00	1.04E+00
SO2	2.98E-03	6.50E-02	1.18E-02	1.07E-02	8.72E-03	2.11E+00
THC-CH4	3.79E-01	6.97E-01	4.24E-01	3.18E-02	4.23E-01	1.07E+00
CH4	1.19E+00	1.39E+00	1.24E+00	3.78E-02	1.24E+00	1.03E+00
NOX	6.72E-03	6.10E-02	1.62E-02	8.38E-03	1.46E-02	1.54E+00
NO2	1.00E-06	5.01E-02	8.63E-03	5.62E-03	6.98E-03	2.89E+00
NO	1.79E-03	7.17E-02	7.33E-03	6.72E-03	5.95E-03	1.83E+00
OZONE	4.02E-03	2.31E-02	1.95E-02	3.39E-03	1.91E-02	1.28E+00
SOLAR RAD	1.00E-06	1.00E-06	1.00E-06	0.00E+00	1.00E-06	1.00E+0
TEMP	4	9	8	1		
HUMIDITY	84	105	94	7	93	1
BAROMETER	992	993	993	0	993	1
WIND SPEED	5	18	11	2	11	1